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AND

SCIENTIFIC METHODS

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AND

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PSYCHOLOGY AND SCIENTIFIC METHODS

ALGEDONICS AND SENSATIONALISM

IT is seldom that I have experienced a stronger sense of the mental grasp and intellectual integrity of the writer of a book than I do as I close Titchener's "The Psychology of Feeling and Attention." To the author's keen insight, sound reasoning, and fine judgment, are added high scientific aims and standards, and a vigorous attempt to free himself from scientific bias.

And yet I find myself convinced that in this last-mentioned effort we note, in at least one important direction, a signal failure. In the very beginning of the first lecture[1] we read that "when we speak of the laws of attention, we have always in mind a distribution or redistribution of the *sense*-processes that make up the consciousness of the moment;" and here and throughout the whole of the book we find a bias towards sensationalism which in my view often leads the author to overlook certain data of the greatest importance to his consideration, and thus to reach conclusions that are entirely unwarranted: for it is all too true, as he says,[2] that "if you are 'favorably impressed' by a scientific theory, the facts that support the theory crowd in upon you, while the outstanding facts, those that can not connect with the trend of consciousness, fail to present themselves; you mean to be impartial, and the conditions of attention make you one-sided."

In relation to the matter to be treated in this article the author indeed rejects the extreme sensationalistic position of Stumpf, to which I shall especially refer below; but in the end he returns to a modified form of it, and the book is fairly saturated with sensationalistic phrases and arguments.

It is natural, of course, that our psychophysicists who necessarily concern themselves so continuously with sense-phenomena should show a tendency to underrate the significance of non-sensational experience; but it appears to me that with them as a class sensationalism has become nothing less than an obsession. It is true that among

[1] *Op. cit.*, p. 7. Italics mine.
[2] *Op. cit.*, p. 198.

them there are not wanting distinguished exceptions, men of deeper insight who will not allow themselves to be blinded to the wealth of facts which tell against the sensationalist position, men like Professor R. S. Woodworth for instance, whose name, by the way, does not appear in the "index of names" of authorities quoted by Professor Titchener, a fact which is very significant in this connection. Unless we assume this obsession in favor of sensationalism it is impossible to understand how able men like Titchener and Külpe and Stumpf can overlook the patent fact that an enormously large proportion of our pleasures and pains (or unpleasantnesses if you will) are far removed from what we all agree to call sensations: that this large proportion is made up largely, for instance, of emotional situations, which it can not be claimed are certainly sensational in their total constitution; but especially of states that are involved with the agreeable flow of thought, and with the disagreeableness attending the thwarted development of presentations in doubt and hesitation.

The greatest difficulty in connection with the discussion before us is the persistency with which the issues are clouded by the use of the vague term "feeling," which, as Ward[3] long ago showed, is employed with many distinct meanings. Titchener often substitutes the word "affection" for feeling, but does not thus relieve us from this difficulty; for he thinks of affection sensationally, yet the term has a distinctly emotional connotation and is often made to refer to emotions directly,[4] while, on the other hand, it much more often is meant to refer to pleasure and pain. Certain pleasures, to be sure, are spoken of as emotional,[5] and emotions are said to "arise from the combination of feelings,"[6] but as I indicate below[7] the suggestion that emotions are pleasure-pain compounds is not warranted by the evidence before us.

As I wish to avoid vagueness so far as possible, I may say at once that I propose here to consider pleasure and pain as such, and not "feeling" or "affection."

[3] Confer my article "The Nature of Feeling," this JOURNAL, Vol. III., p. 29.

[4] Top of p. 129.

[5] P. 89, l. 19 ff.

[6] P. 129.

[7] Confer my "Pain, Pleasure and Æsthetics," pp. 90 ff.; also my article "Pleasure-Pain and Emotion," *Psychological Review*, January, 1894. The most cogent objection to the classification of emotions as pleasure-pain phenomena, or of pleasure-pain as emotional phenomena, lies in the fact that all our clearly differentiated emotions (*e. g.*, surprise, fear, anger, etc.) are definable as forms of instinct experiences which are the correspondents of instinct actions which have to do with the advantage of the whole organism in the presence of special environmental conditions; and there is no evidence whatever that pleasure or pain can thus be described.

To one who takes the broad view above spoken of, from which the sensationalist is debarred by the "permanent set" of his mind—if we may borrow an engineering term—it becomes apparent that we must look for the nature of pleasure-pain in some psychic process or situation more general than that which is correlated with peripheral stimulation; and this leads men like Ward and Stout to look quite over the heads of the sensationalists. Thus Ward[8] tells me "there is pleasure in proportion as a maximum of attention is effectively exercised; and pain in proportion as such effective attention is frustrated": and Stout[9] that "the antithesis between pleasure and pain is coincident with the antithesis between free and impeded progress to an end."

It is more than twenty years since Ward wrote his definition, and there is no evidence that he has seen reason to withdraw or modify it. It is more than sixteen years since I published in *Mind* certain articles, which appeared later as chapters in my book "Pain-Pleasure and Æsthetics," in which I attempted to show that in search for the general process involved in algedonic phenomena we must lay emphasis on efficiency in relation to pleasure, and inefficiency in relation to pain; and that pleasure-pain must thus be looked upon as a general characteristic, or quality,[10] as I called it, of all presentations. This truth that the general psychic processes efficiency and inefficiency had essential relation to algedonic phenomena is a doctrine at least older than Aristotle, and was recognized in his time as corresponding in some manner with the physical processes involved with bodily efficiency and inefficiency. So strong has been the conviction that this relation is of importance that the theory has held its own notwithstanding that, as commonly stated with reference to the efficiency and inefficiency of the whole organism, it meets with serious difficulties which were not removed by Spencer's attempt to restate it in developmental terms as having reference to efficiency-inefficiency of the organism as a member of a species. The persistence of this doctrine among thinkers of various schools seemed to me a fact of importance, and it occurred to me that the objections to it might be removed if it were stated in terms of the efficiency and inefficiency of the neural elements whose activities correspond with the presentations which appear pleasant and painful respectively. This suggestion led to the formulation of an algedonic theory which I did not publish until I was firmly convinced of its general correctness, and which I have been studying carefully during the years since the publication of my book above

[8] *Encyclopedia Britannica*, article on "Psychology," p. 71.

[9] "Analytical Psychology," II., p. 270.

[10] See below.

mentioned, gaining in the course of that study much corroboration of the hypothesis, and seeing no reason to think it requires substantial modification. This, it is true, may be due to the fact that I am "favorably impressed," to use Titchener's phrase, with an hypothesis in which I have a personal interest: but I have done my level best to avoid this bias, and no one can ask more of any mortal.

In connection with this psychological hypothesis I attempted to show that the neurological evidence in our possession did not contradict, but rather favored, this view; and the physiological bent of the psychologists of the day led them to treat this, which was really a side issue, as though it were all there was of any moment in my discussions; while the sensational obsession under which many of them labored prevented all appreciation of the general psychological position defended, and blinded them to the significance of the evidence presented in opposition to the sensational view.

This evidence I gave in detail both in my book above mentioned, and in a special article entitled "Pleasure-Pain and Sensation,"[11] which the editors of *Mind*[12] allowed to be described in their review of periodicals as "a thoroughly searching and effective criticism of the theory that pleasures and pains may be regarded as special kinds of sensation coordinate with other kinds such as sensations of color and sound." But to speak of this as an *effective* criticism indicated altogether too sanguine a view, as is evidenced in the late strong defense of the sensational theory of pleasure and pain by no less eminent a psychologist than Stumpf.[13] This view of Stumpf's has been attacked lately by Professor Max Meyer;[14] and is rejected by Titchener in the work here discussed, although he also rejects my view, and substitutes one of a sensationalist type to which I refer later.

The limits of this article will, of course, prevent me from repeating what has appeared in my articles and book above referred to; but I may say that perhaps the most striking weakness of the sensational doctrine of pleasure-pain is found in the fact that each presentation that is clearly recognized as a sensation answers to a receptivity of energy from the environment; and each differentiation of sensation to a differential form of this energy. If pleasure and pain, then, are sensations, we surely must look for some types

[11] *Philosophical Review*, I., 6, November, 1892.

[12] January, 1893, p. 136.

[13] "Ueber Gefühlsempfindungen"; read before the Society for Experimental Psychology at Würzburg in April, 1906, and since republished with slight changes in the *Zeitschrift für Psychologie*, XLIV., 1906, pp. 1 ff.

[14] "The Nervous Correlate of Pleasantness and Unpleasantness," *Psychological Review*, XV., 4 and 5.

of environmental energy to correspond with them; and such we do not find.

I may be allowed space, perhaps, to note one other point, which has come to my attention since my book was written, in relation to the position of the hypothetical nerve terminals. We have what are called "pain spots" on the skin: this is not questioned, but as I have claimed it may be held that they are points which under usual stimulative conditions are almost necessarily painfully qualified: this view being favored by the late observation, to which Titchener calls attention,[15] "that stimulation of á 'pain spot' gives qualitatively different sensations, according to the intensity of the stimulus. At a very low intensity we have itch; then prick or sting; and lastly, at higher intensities, pain."

Passing over the fact, very remarkable if the sensational theory is true, that no "pleasure spots" have been discovered, we must, I suppose, if we maintain the radical sensationalist view, assume that pain sense terminals similar to those ending in the "pain spots" exist in the nerves, and muscles, and intestines, and in the teeth. Now we find that nature grants us sense terminals only so far as they serve the organism by bringing into existence *instinctive* reactions which lead to advantageous or protective results. The sensationalist, then, may claim that the "pain spot" sense terminals are placed on the surface of the skin to bring into existence the instinctive reactions determining withdrawal from dangerous stimulation; although it may be noted that this advantage would be equally well gained if qualitative painfulness led to the same result. But what shall we say of intestinal pains, and sciatica pains? Do they induce instinctive reactions of the organism which lead to protection of the disordered parts or of the organism? And what shall we say of the tooth-nerve pains? We may assume, I suppose, if we choose, that there are pain terminals in the teeth: but if so it is evident that they can not be placed there for organic service. For if they exist they do not come into action until the tooth is so far injured by decay as to be beyond repair by the natural man. What is more, they do not give rise to any instinctive reactions looking to the protection of, or advantage of, the organism as a whole, or of the tooth part. In fact, the natural man is merely led by the pain to extract the aching tooth, an action which involves clear intelligence and is not instinctive; and which, furthermore, is of disadvantage to the organism, as the loss of the tooth tends to impair the man's digestion.

The reader may think that we have already said enough concerning this radical sensational theory, especially as Titchener, to whose work we here especially refer, joins us in rejecting it; so we

[15] P. 90.

may turn to the consideration of the grounds upon which Stumpf rejects the qualitative theory that I defend, in which rejection Titchener agrees with Stumpf on the ground that it "received its *coup de grace* at the hands of Külpe in 1893."[16]

The question is whether the facts which Külpe presents are properly stated and interpreted; and whether they suffice to overbalance the evidence in favor of the qualitative, or what Titchener might call the attributive view.

And in this connection we find an exemplification of a mistaken scientific procedure—which may almost be called the experimentalist's fallacy—which leads the investigator to abandon a theory without hesitation provided he discovers a single fact which seems to contradict it; and this without even asking whether any large number of facts are explained by the theory. If the latter is the case he surely is not warranted in claiming that his contradictory observations necessarily give the *coup de grace* to the theory; but should be led to ask whether he thoroughly comprehends the theory, or whether he has correctly interpreted the facts which appear to be opposed to it.

It appears to me that if Stumpf consistently carried out the principle upon which he acts in waiving aside, on the basis of Külpe's opposition, the qualitative or attributive view of pleasure and pain, he would drop even more quickly his own sensational view, if he could once grasp any small proportion of the evidence unfavorable to it that has been presented.[17]

We may now consider the two objections to the qualitative theory of pleasure and pain which to Külpe and Stumpf and Titchener seem sufficiently formidable to warrant the overlooking of all favorable evidence. And I may say at once that the first of these difficulties occurred to me after the writing of my book, and was interpreted long before my attention was called to Külpe's criticism. It has not seemed to me important enough to make it the basis of any special written discussion.

To put it in Titchener's words,[18] "Külpe points out that affection can not be an attribute of sensation of the same sort as the recognized attributes, because it has attributes of its own. Sensations show differences of intensity, quality, time, and (in some instances) space; affection shows differences of intensity, quality, and time."

Now when I speak of the intensity or duration of a pain I am dealing with pain as viewed in reflection, not with an experienced

[16] P. 84.

[17] He acknowledges in a foot-note to his *Zeitschrift* article that he has heard of the existence of my book above mentioned, but has not read it.

[18] P. 84.

pain. Apart from such reflective consideration I can not refer to the intensity or the duration as an attribute of the pain. In such consideration I may use the phrase degree of pain, instead of the phrase intensity of pain, without any change of meaning whatever. In exactly the same way I may look upon intensity in reflection, and then may speak of its degrees. If, then, it is true that the ascription of degrees to pain proves that pain can not be an attribute of a presentation (sensational if you insist), then it would seem to follow that the ascription of degrees to intensity proves that intensity can not be an attribute of a presentation.

And the same may be said of duration. In the mood of reflection we may speak of the duration of an intensity as well as of the duration of a pain; and if the ascription of duration to a pain proves that pain is not an attribute of presentations, then the ascription of duration to an intensity proves that intensity is not an attribute of presentations.

Of Külpe's qualitative differences of pleasure and pain we need not speak at length, for his meaning is not clear to me, nor apparently to Titchener, who with his usual candor admits,[19] "I myself have never observed a qualitative differentiation of pleasantness-unpleasantness, under experimental conditions." It may be well to say, however, that in relation to this matter of quality I am not confident that Titchener quite catches the meaning of the theory I uphold. He seems to suggest that I look upon pleasure and pain as qualities in the same sense that we speak of the difference between the qualities of sensation which yield audition and sight, which are the only qualities with which the sensationalist concerns himself. But I use the term quality in a broader sense (the word characteristic might almost take its place). I use it in much the same way in which we often employ the term to apply to intensity;[20] and under Titchener's phraseology I am not sure that I am not justified in speaking of the theory, as I have once or twice above, as the attributive theory of pleasure and pain.

We may turn now to Külpe's second difficulty,[21] namely, "that the annihilation of an attribute of sensation carries with it the disappearance of the sensation; whereas a sensation may be non-affective, indifferent, and still be far removed from disappearance." I may acknowledge at once that I have probably been led by the common use of the word indifference to employ it carelessly, much as Titchener himself does, for instance, on the top of page 69; and I am ready to agree that certain of my statements may have led to a

[19] P. 161.

[20] *Cf.* my "Pain, Pleasure and Æsthetics," p. 46.

[21] *Op. cit.*, p. 85.

misunderstanding of my position in this regard. But it seems to me that my conception of indifference ought to be sufficiently clear in the fact that I speak of it as a point of transition;[22] and in the fact that I have distinctly held that much that we ordinarily speak of as indifference is merely a condition where pains and pleasures are nicely balanced, and of such very low degree as not to be noticeable.

With this conception in view it seems to me that Külpe's second difficulty disappears. It is perfectly true that a sensation does not disappear because it becomes what we call "indifferent"; but that is because its pleasure has been reduced to a minimum, as when, perhaps, it is about to give place to pain; or because its pain has been reduced to a minimum, as when, perhaps, it is about to give place to pleasure. Where the pleasure is of high degree the pleasure can not suddenly disappear, unless the presentation to which the pleasure attaches also disappears; and the same is true of pain of high degree. In this respect, therefore, it is as true of the pleasure-pain attribute as it is of the intensity attribute, that its annihilation carries with it the disappearance of the presentation which it qualified.

We may turn now for a moment to Titchener's own theory,[23] which, with his usual caution, he does not claim to be more than plausible.

"The affections," he says, "appear . . . as mental processes of the same general kind as sensations . . . that might, under favorable conditions, have developed into sensations," that are, as it were, non-developed sensations. "Had mental development been carried farther, pleasantness and unpleasantness might have become sensations—in all likelihood would have been differentiated, *each of them,* into a large number of sensations." The function of pleasure is to report "good" and that of pain to report "bad."

Here we have a theory sufficiently sensational to allow its author to maintain his rank as a leader among the sensationalists. But let us see to what it leads us. If development had not been checked we would under this view have had not merely pleasure and pain, but α pleasure, β pleasure, γ pleasure, etc.; and δ pain, ϵ pain, ζ pain, etc.: for surely α, β, and γ would all have reported "good"; and δ, ϵ, and ζ would all have reported "bad." And in such a high state of development pleasure would surely be an attribute of α, β, γ, etc.; and pain an attribute of δ, ϵ, ζ. And if in a higher state of development pleasure and pain might thus have an attributive nature, it is difficult to see why the author of this theory should so obstinately oppose an hypothesis which grants them this same nature, as they now exist in our supposedly undeveloped state.

[22] *Cf.* Fouillée, "Psychologie des idées forces," p. 67.

[23] *Op. cit.*, pp. 291 ff. Italics mine.

In closing I may say a word in relation to the attributive algedonic theory in its physiological aspect.

We have various degrees of activity in those parts of the nervous system which concern us in considering consciousness. The recognition of these degrees of activity is clearly important to the development of the conscious animal, and we should therefore expect them to have psychic correspondents. Nor are we disappointed, for we discover them in our appreciation of diverse degrees of intensity.

We have also diverse relations between the call for activity in nerve parts due to stimulations, and the capacity to react; this relation involving either neural efficiency or neural inefficiency. And as the recognition of these differences of relation is also clearly important to the development of the conscious animal, we should expect them also to have psychic correspondents.

Nor are we disappointed here; for, in my view, the discrimination of the relation of neural efficiency is given in consciousness as pleasure, and the discrimination of the relation of neural inefficiency is given in consciousness as pain. And these pleasures and pains are general qualities or attributes of presentations, just as their neural correspondents are general characteristics of neural activities.

Is it at all likely that neural relations so important to the persistence of the animal involve no corresponding psychical differentiations? I think not. And if this is true, what such psychical differentiations other than pleasure and pain have the opponents of the attributive algedonic theory to offer for our consideration?

HENRY RUTGERS MARSHALL.
NEW YORK CITY.

DISCUSSION

OBJECTS, DATA, AND EXISTENCES: A REPLY TO PROFESSOR McGILVARY

I CAN not be otherwise than grateful to Professor McGilvary for the pains he has taken in acquainting himself with my logical analysis and in setting forth his results so clearly and succinctly.[1] Gratitude, if nothing else, would lead me to respond to his friendly challenge.

I

I begin by quoting almost *in toto* one section of his criticism, having inserted letters for convenience of subsequent reference to portions involved in the discussion.

[1] In his article entitled "The Chicago 'Idea' and Idealism," in this JOURNAL, Vol. V., p. 589.

"There is one further difficulty that I wish to lay before Professor Dewey in connection with his new distinction between fact and idea. (*a*) I suppose that most of us accept the other side of the moon as a fact, on a par *as fact* with this side of it. . . . (*b*) This fact, while as accepted fact it is on a parity with this side of the moon, yet as experienced fact seems to differ considerably from it. I can see the one; I can not see the other. . . . There is, after the conclusion is reached that the moon has two hemispheres, a considerable difference in our experience between the two hemispheres, and this difference does not seem to budge however we may pry upon it with changed meanings of terms. The realist, following the ordinary usage, says that while there are two lunar hemispheres, only one can be immediately experienced, and the other is accessible to us only by means of idea. . . . What is pragmatism going to do with this difference? If it ignores it, can it keep peace with science? . . . (*c*) Science makes a thoroughgoing distinction between observation and inference, between empirical facts and scientific constructions upon the basis of facts. . . . What we take to be a satellite, 240,000 miles distant from the planetary earth, may after all not prove to be what we think it is. But suppose that such a change in scientific construction should ever take place? (*d*) All is not lost from present scientific fact; there remains the fact that there is a bright something occasionally in experience, growing from slender crescent to full orb. . . . This fact may come to be interpreted as anything you please, and get accepted as that thing; but it will be there to be accepted somehow whenever any one constituted like us opens his eyes and turns them in the right direction at an opportune time. This kind of fact, and there are many of them, forms the inexpugnable datum of thought. It is the givenest of givens, *datissimum datorum*. . . . These data of the first order are in the game, but not of it. They give to one lunar hemisphere a primacy which no terrestrial thought-reorganization can give to the other. Now a philosophy which keeps close to experience can not well ignore this distinction between the two kinds of data."

Contradictions confront one in the subject-matter of this passage—the natural inference is that they have their source in my position. Is this the case, or do they inhere in the ground taken by my critic? Let me first state the gravamen of the charge brought against me, as briefly and as impartially as may be. I have held that objects accepted at the *conclusion* of a judgment (the lunar sphere, for instance) issue from a *process* of judging in which data (brute observational facts) and hypothetical meanings (conceptual *ideata*) are at once discriminated from and referred to each other; and that they issue in such fashion that the finally accepted object

presents both a reorganization of the data through the "idea" and a verification of the "idea" through the experimental processes by which a meaning is taken up into the data. Mr. McGilvary holds that this lands me in subjective idealism—for it admits no "facts" or "objects" except those into whose constitution "ideas" have entered. It also puts me in conflict with scientific method for it ignores "data of the first order" which remain the same yesterday, to-day, and forever, so far as any "thought reconstruction" is concerned.[2]

II

My reply, in substance, is (1) that I have *not* ignored the existence of *datissima datorum;* that the assertion of their existence antecedent to ideas as such is essential to my theory of the reconstructive nature and work of the reflective process; (2) that my critic confuses such data, wholly non-cognitional, non-logical in character, with data which are in and of judgment, and hence distinctively logical in quality; (3) that he puts himself in conflict with science in ascribing to data (of the second kind) a higher knowledge value than belongs to the objects which are accepted as the conclusions of judgment.

The following discussion, while involving the above propositions, will follow, however, a different order. I shall try to show that in the portions of the citation marked off by the letters (*b*), (*c*), and (*d*), he has repeatedly transferred what holds good in one sort of situation to another sort of situation, and that the difficulties he notes flow not from my position, but from this interchange of propositions, each sound in itself, but so distinctive in meaning and reference as to negate the possibility of such transfer.

1. The lunar sphere (it is suggestive, as we shall see below, that my critic sticks closely to "two hemispheres" rather than to one sphere) is related—as stated in (*b*)—to the individual's act of recognizing it in a twofold way. Just *because* the assertion in (*a*) is true, *viz.,* that the two hemispheres stand as accepted facts on a parity, the individual in apprehending the single total fact *can not* be related to the far and to the near sides in the same way. The statement about the *difference in the modes of experiencing* the two sides is thus congruous with the acceptance of the object in which a judgment is concluded—and it is congruous *only* with its acceptance. *An analysis of the way a fact is apprehended can not, by the nature of the case, be made to yield a statement of the nature of that fact*

[2] Mr. Nunn in his suggestive "Aims and Achievements of the Scientific Method" has also criticized the view of hypothesis and its function set forth in the "Contributions to Logical Theory" on substantially the same ground. See sections 67 and 68.

which is incompatible with the nature whose method of apprehension is under analysis. I come in the sequel to the question of why I deny I am an idealist; but the gist of the matter lies right here. All idealist epistemologies with which I am acquainted perform exactly the self-contradictory act indicated in the last sentence.

There are two alternative ways of interpreting the statement of my critic that "as an *experienced* fact" the other side of the moon differs from this side, even though it be on a *parity* "as an *accepted* fact." In one way of interpretation, the fact that "only one side can be immediately experienced, and the other is accessible to us only by means of idea," refers precisely to the ways in which the different related elements in one complex fact are *accessible* to us. The proposition has as its universe of discourse not the relative cognitional status, or respective knowledge-values, of this side and the other side of the moon, but the mode *of our access* to elements possessed of the same cognitional value. The other mode of interpretation concludes that because our mode of access is different, therefore the elements to which we have access *stand on a different footing.*[3]

2. Let us consider both of these alternatives in relation to Mr. McGilvary's argument. If we take the first (which seems to me perfectly sound) we may discriminate, with respect to the lunar sphere, different relations of the two sides to our manner of apprehension; and from the standpoint of the *relation of the moon to our cognizing organism* distinguish the *sensory* quale of this side from the *ideal* or *suggested* quale of the other side. We may even, if we wish to (but I wish nobody wished to), speak of the former qualities as, *in this relation,* sensations; the latter as *ideas*—but, of course, *if* we so name them the facts control the meaning of the names, not the names the character of the facts. "Sensations" mean what Professor McGilvary in an earlier article[4] well termed *sensa, i. e., qualities* of an object in relation to our mode of apprehension. It is a disappointment that Mr. McGilvary has not borne in mind in this article what he so clearly pointed out before—*viz.,* "that the term sensation is an *omnibus* term" (p. 458). If he had done so, he would have realized that in pointing out a fifth passenger in an obscure corner of the coach in which Mr. McGilvary had already discovered four fellow-travelers, I was neither altering the "ordinary acceptation" of the term (*which* of the four is the "ordinary," I wonder?) nor yet denying the existence of the facts to which any one of the other

[3] The implication in the quoted passage that the fact as *immediately experienced* occupies a position cognitionally superior to the fact *accepted* after judgment is somewhat startling in view of Mr. McGilvary's previous criticisms of me, on the basis of attributing this notion to me. But of this "more anon."

[4] This JOURNAL, Vol. IV., p. 457.

four refers. But in any case, if Mr. McGilvary intended or accepts *this* alternative interpretation, no inconsistency lies at my door. It is true as an accepted fact of astronomy that the two sides of the moon are on a parity; and it is true as an accepted fact of psychology (or whatever the universe of reference may be) that, *given this astronomical fact*, the experience of apprehending it is related to its two sides in different fashions.

If the other interpretation is accepted, then and then only, does *this* side have a certain priority and supremacy over the other side; and only then can Professor McGilvary charge me with ignoring the plain procedure of science. But if he intends and accepts this second alternative, then he uses his analysis of our *recognizing-experience to discredit scientific knowledge*—the conclusion that the two sides stand as hemispheres on a parity. In this case, it turns out to be he, not I, who should be worried about "keeping peace with science"—for I do not think he will persuade the astronomer to accept a moon which is fact on this side and idea on the other: green cheese possibly, but "idea" never.

3. In the portion designated (*c*) a further confusion comes to view. The difference between the two modes of cognitive access to one fact appears now to be confused with *a distinction lying within the process of judging or coming to know, viz.,* that between "observation and inference," "empirical facts" and scientific constructions upon them. Again two alternatives are possible. Either it is meant that this distinction (with superiority resting on the side of "observation" and "empirical facts") holds during the process of judging the real form of the moon, while, that is, we are still in search of an "acceptable" fact; or it is meant that this quality of values persists after the conclusion is reached—even after the problem of its form is solved! If he means the former, he has no quarrel with me, for it is precisely this antithetical relation of datum and ideatum which I have made the peculiar differentia of judgment-in-process, as distinct from inconclusion. But if he means the latter, how shall he keep peace with science? For the characteristic of *scientific* knowledge is that it finds its genuinely acceptable object in the conclusions of a systematic process of inferential inquiry rather than in "observations" *isolated* from all inferential matter, or in "empirical facts" set over against *rationally* organized and explained facts. When doubt as to the objective character occurs or recurs, then, of course, the antithesis recurs; and then the *datum* becomes the factual element and the *ideatum,* the hypothetical element. But as long as the conclusion remains unchallenged, so long the object *is* as the conclusion describes it. Moreover, when there is doubt (and hence when judgment is going on, not concluded) the factual superiority is only

of the datum in *that* judgment over *its* hypothetically suggested interpretation, not over the accepted facts of scientific conclusions as such. For the entire process of re-coordinating the raw data *rests upon the acceptance of a whole system of other facts, not questioned simultaneously, which are conclusions of other judgments in which thought has intervened.*

4. In the passage marked (*d*) the issue shifts to what seems to me a more tenable position. Up to this point, my critic has assumed the hemispherical quality of *this* side of the moon to be a given "empirical fact" from which the hemisphericity of the *other* side is an inference! If we had any direct knowledge that this side of the moon is a hemisphere, the "conclusion" that the other side is a hemisphere might adorn an exposition of Kant's analytic judgments, or enliven a treatise on "immediate inference," but it would not illuminate the history of astronomy. Of course, the inference is that the *moon is a sphere,* the hemi-sphere character of *both* sides being involved in this conclusion. This obvious fact is indicated in Mr. McGilvary's reference to the "bright something occasionally in experience growing from slender crescent to full orb as the primary datum."

The substitution of this statement for the hemispherical character of this side only strengthens, however (it may be truly replied) Mr. McGilvary's argument, for here at last are indeed *datissima datorum.* But how does this bear down on me? I have insisted (much to my discredit among "objective idealists") that there are non-logical antecedents for every specific reflective situation (and that *all* reflective situations are specific) so that knowledge involving thought is occasioned by non-reflective or alogical ("practical") factors in an antecedent experience.[5] I ask for no better proof of the hold of *intellectualistic*[6] epistemology upon current thought than is afforded by the fact that the position that thought operates in all judging processes (and hence is embodied in all judgment-conclu-

[5] I may remark in passing that some of the criticisms made against this position from the side of the objective idealists would not have been made if it had been seen that my position does not demand that the prior situation as prior should be non-reflective *per se,* but only *as calling out thought*—that it does this in virtue of a clash or conflict which itself is wholly non-reflective, no matter how reflective the situation in which it is found.

[6] Professor McGilvary incidentally questions the use of the term "rationalism" in my "later writings." I do not recall how extensive that use is, but I plead guilty. Rationalism is too closely associated with "free thought," or free criticism, on one hand, and with the antithesis to empiricism on the other, to be conveniently used as a term to designate intellectualism as against pragmatism:—for pragmatism may be "rationalistic" in the first sense, while empiricism may be—sensational empiricism *has* been—as intellectualistic as any rationalistic theory.

sions) has seemed to so many critics to involve an idealistic theory of the nature of existence. It would, if to *exist* and to be subject-matter or result of cognition were equivalent terms. But the very denial of intellectualism claims that to exist—to exist even as matter of "experience"—is *not* to be identified with the status of a cognized something, whether during judgment or as its conclusion. And this mode of existence furnishes me as well as Professor McGilvary an impregnable fortress, a "givenest of givens." If to believe in it makes him a realist, then it also makes me one.

If there be a difference between us, it must be in the character assigned the prior factor. What *is* the nature of what happens "whenever one constituted like us *opens his eyes and turns them* in the right direction" (italics mine), so that a crescent or an orb is seen? I say that what happens has the nature of an *act;* that it *exists* as an act. I have said that while the act may be cogni-*tive* (that is, exercise an influence upon further knowledge) it is not itself properly called cognition.[7] What does Professor McGilvary say?

If he says that it is a mode or content or object of knowledge, *qua* knowledge, what relation does its content bear to the datum in judgment? Is it identical with the former? Are the heavens and the furniture of the earth which we see when we *open our eyes and turn our heads* the same thing as those isolated, selected data of observation which the astronomer accepts as given, and works upon in figuring out the shape of the moon? Then is the rational or objective idealist lying in wait to swallow up Professor McGilvary by his simple method of pointing out the merely particular, *merely* observational (*i. e.,* sensible), merely fragmentary, chaotic, lawless character of such data, and the necessity of conceptual (or thought) relations to organize such brute trivialities into our significant world of related objects. Or, on the other hand, does Professor McGilvary mean that looking and seeing things *is* knowledge *par excellence?* that

[7] Aside from the question of fact, a dialectical difficulty should perhaps, to avoid misapprenhension, be referred to. It may be said that I am assuming that primary "data" are here known—or may be known—as acts, and hence I have myself reduced them either to "data" undergoing interpretation or else to accepted objects of judgment. This objection, so frequently made, shows again the domination of the intellectualistic assumption. My position is that the term "experience" denotes primarily a mode of *existence;* experience may *exist* as an act-of-a-certain-specific quality, and that does not have to be reduplicated as knowledge in order to possess the character which it has. As for the other objection frequently made, that this reference to an act is pure individualism, I only want here to point out that it is the critic's assumption, not mine, that an act such as seeing is something attached to or possessed by an individual. As I see it, the individual is within, not without, the act, and within it as only one of its factors.

it represents the cognitional function at its best? Then how does he keep peace with science? How does he avoid the conclusion that scientific knowledge is a hoax, an intentional arbitrary perversion of or declension from what we already know in a better, truer way? But, on the other hand, if it be admitted that what occurs when "one constituted as we are" uses his organs in accordance with their own structure is not knowledge at all—in any intellectual or scientific sense of that term—we are free to admit the primary existence of something with respect to any and all thinking, and at the same time free to admit that when the standpoint of knowledge as knowledge is once taken, the conclusions of systematized inference have a status superior to any other determinations.

This, I hope, at least answers the question of Professor McGilvary as to what I mean when I say that I do not conceive my position to be idealistic. I do not think it requires "thought" to see and to hear any more than it does to digest; though I also think that after thought has intervened such an action may be performed better, more economically and effectively—and also more chaotically and wastefully—to say nothing of its results having an infinitely more precious value.

III

Professor McGilvary inquires whether I am not, in any case, an idealist in the current sense of idealism—a sense which he states as follows: "the theory which regards all reality as embraced within experiences or within experience." He adds, "A clear unambiguous answer by Professor Dewey to the question whether he is an idealist in the current sense as defined above would, I am sure, make his view much more intelligible." Ah, my dear questioner, I am tempted to reply, there are certain prerequisite conditions for "a clear and unambiguous answer": namely, that the question be clear and unambiguous. What is meant by "embraced"? Is it to have an *existential* meaning?—that some *thing* called experience holds physically or metaphysically other things in its embrace? Then I do *not* accept the theory. Or is its meaning *methodological?* that philosophy, like science, proceeds intelligibly and fruitfully to verifiable results only by taking experienced, not transcendental, things, and by discussing them in the characters they empirically possess, not in the characters which, according to some *a priori* method, they *ought* to possess? In that case my answer might be affirmative, coupled with the admission that I know shamefully little about "all reality," since my empiricism is precisely that the only realities I do know anything about or ever shall know anything about are just experienced realities—for I do not suppose the phrase "all reality" was a trap laid for me.

Again, would not a "clear and unambiguous" definition of experience be both a boon in general and a prerequisite to a clear and unambiguous answer to the question asked? In neither of the two senses of experience which Mr. McGilvary expressly sets forth (on page 595) can I answer his question affirmatively. In the sense in which he *uses* the term on his next page (in the passages quoted) but without defining it, my answer would probably be affirmative. But in that case I am confused, for Professor McGilvary says *that* view is realism. And a reply that made me out both realist and idealist at the same time might not strike anybody as "clear and unambiguous." But perhaps if Mr. McGilvary should make explicit the sense in which he uses the word "experienced" when he talks, for example, about our experience of the moon as changing from crescent to full orb, and should contrast that with his use of "experience" in the instance of the perceived stone, he would discover a vital and pregnant meaning of experience which would reveal that he and I as human beings are much alike in what we mean by experience. And in that case I am quite willing to leave it to my critic by what names he and I are to be labeled.

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REVIEWS AND ABSTRACTS OF LITERATURE

Études d'histoire et de psychologie du mysticisme. HENRI DELACROIX. Paris: Felix Alcan. 1908. Pp. 470.

This considerable contribution to our psychological knowledge of religious life is the work of one known heretofore as an historian, the author of an "Essay on Speculative Mysticism in Germany," who now reveals himself as also a well-informed and acute psychologist.

His intention has not been to make a study of mysticism in general, but merely of a well-defined group, namely, the Christian mystics, Ste. Theresa, Mme. Guyon, Francis of Sales, John of the Cross, and Suzo. He explains his choice by the remarks that these persons are creators who have found a new form of life, and that there are extant documents—autobiographical and others—which make possible the realization of his purpose. This book deals, then, in essence, with the group of mystics that is the subject of my two papers in the *Revue Philosophique* for 1902, and of my article on the "State of Mystical Death" in the *American Journal of Psychology* for 1903. But the reader will find in Delacroix's volume a much more complete historical study of Christian mysticism than any psychologist had so far attempted, and also a more detailed and thorough treatment of its problems. This is too solid and deserving a piece of work for me to subject it to the shabby treatment, deserved by too

many productions on similar subjects, of a critical review limited to the very small space at my disposal. I shall, therefore, wait for more suitable opportunities of dealing with those of his views which, to my mind, call for discussion, and content myself here with such statements as may serve to give some idea of the content of the book. I may, however, add that my publications on mysticism show little substantial disagreement with him.

The first three chapters (pp. 1–117) deal with Ste. Theresa: her life, the development of her mystical states, her auditions, and her visions. In the second of them he sets down three great periods, characteristic also, with minor differences, of the development of every one of the mystics of this group. They are: (1) A period marked by delightful experiences of an ecstatic sort. The author describes it (p. 65) as "a discontinuous possession of God in which moments of contemplation and of activity alternate, and in which subsist the ordinary distinction between the divine and the human. (2) A period bearing some analogy to the depression stage of psychopathic persons; it is characterized by persistent diffused pain and more or less frequent moments of "painful" or "negative ecstasy." (3) The preceding experiences bring about, or coincide with, "a radical and total transformation of the soul and of life by a continuous divine possession, permanent and conscious." It is this stage Ste. Theresa calls *spiritual marriage.*

In the same chapter is discussed the external influences which may have determined the form and the sequence of her states. This problem is taken up in a broader manner in a later chapter ("Experience, Systems, and Tradition"), and the conclusion is reached that although one recognizes in the formation and the development of the mystical life the influence of external directing ideas—church doctrines, for instance—which keep the "expensive intuition" of our mystics from intolerable extravagances, nevertheless one can bring back their experience neither "to the suggestion of a personal system of a purely abstract construction formed before the experience, nor to a tradition" (p. 363).

Mme. Guyon is then taken up in a similar manner: first, her life (pp. 118–196); then the analysis of her mystical states and automatisms, their several forms, their development, and their final outcome (pp. 197–234). This chapter includes a careful and penetrating comparative analysis of automatic and of voluntary activity, and an explanation of the intelligent collaboration of the subconscious with the conscious activity that leads to the establishment of the final, well-defined state common to all the mystics of this group. The characteristics upon which the divine origin of the mystical states rests, according to the mystics themselves, are noted here as already in the case of Ste. Theresa.

Comparatively little space is devoted to St. Francis of Sales, John of the Cross, and Suzo.

In chapter VIII. the author returns to Mme. Guyon, relates the great dispute about *Quietism* in which Bossuet, Fénélon, and Mme. Guyon were the chief actors. These interesting historical pages bring into clearness

the points of difference between the extraordinary Christianity of the mystics and the common-sense Christianity represented by Bossuet.

The last chapter (pp. 365–426), entitled "The Mystical Experience," would provide one who could not read the whole book with a partial summary of the preceding analyses and generalizations, and with a discussion of several of the deeper problems of Christian mysticism; to wit, By what psychological mechanism can these mystics identify their confused "intuitions" with the conception of God set forth by the church? What is the nature of the "mystical intuition"? What is the nature of mystical passivity, and how does it contribute to the end sought by the mystic? How are we to account for the systematic progression of the several mystical states and for their outcome, described by the mystics as "the permanent and continuous union of God with man"?

The systematization of the mystical states is the point on which our author places the greatest emphasis. In the preface he had already declared that Catholic mysticism is "progressive and systematic." "It is this idea of a progress that must be placed in the foreground because it is the one least seen. Most psychologists have thought ecstasy to be the state characteristic of Christian mysticism, and that when not in ecstasy they found themselves in the condition common to all Christians. . . . But that shows a failure to understand the originality of the great Christian mystics; the intermittent and alternating ecstasy gives place to a continuous and homogeneous condition. The transformation of the personality achieved by them is accomplished only little by little, and takes them through a series of states of which the humblest is ecstasy." This continuous and homogeneous condition of the Christian mystic who has reached his goal is contrasted with the antecedent stage (pp. 67–68): "Whereas ecstasy [the experience characteristic of the earlier period] momentarily suppresses life . . . and absorbs the whole mind in the contemplation of the divine, immobilizing the body in catalepsy, paralysis, and contracture, here [in the final period] the mental and bodily powers are no longer suspended . . . the divine no longer destroys the consciousness of the self and of the world, but, on the contrary, it gives itself through them . . . the self is no longer anything else than divine activity."

In agreement with the overwhelming majority of psychologists, Delacroix believes that "the most sublime states of mysticism do not exceed the power of nature; religious genius suffices to explain its grandeur, as disease accounts for its weaknesses" (preface, p. xix).

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The Religious Teachers of Greece, being Gifford Lectures on Natural Religion delivered at Aberdeen by JAMES ADAM. Edinburgh: T. & T. Clark. 1908. Pp. lv + 467.

Not the least interesting part of this book is the memoir of the author, from the pen of his learned widow, which is prefixed to the lectures. We gather there, in faithful detail, how Mr. Adam was the child of High-

land peasants, rising by dint of prizes and competitive examinations to be tutor at Emmanuel College; and how, all through his laborious life, he was upright, kindly, overworked, and typically academic. The only distractions he allowed himself from a grammatical study of the classics (since his love letters, full of Greek quotations, can hardly be called distractions) were to take walking-tours, and to play with his children. This unaffected picture of the devoted scholar prepares the reader for his work, explains its limitations, and adds a certain charm to its simplicity. For it is extraordinarily simple, in spite of the labor and learning involved in preparing it. The plan of the lectures is to repeat the sayings, and expound the probable opinions, of Greek poets and philosophers, from Homer to Plato, in so far as these opinions may be assimilated to that type of religion to which the author and his audience are accustomed. There is no thought of first inquiring what religion essentially is, or what it ought to be; no effort to take an impartial view of its varieties; no attempt to fall imaginatively into even those particular movements of the fancy which created Greek religion, or which transformed it. We are not expected to perceive that these movements expressed far more numerous ideal forces, and far richer passions, than those which the word religion now stands for at Aberdeen. With what naïveté everything is measured by a provincial standard appears in the phraseology, no less than in the scheme, of the book. Thus we read on page 39, "Another not less unfavorable feature in Homer's conception of the Deity." On page 61, "There is no more religious import in the Homeric elysium than can be justly attributed to the epicurean heaven." On page 188, "Where, then, are we to look for Anaximander's uncreated Deity? . . . It is probable, therefore, that Anaximander deified the 'Infinite.'" A jewel of innocence is the following, on page 27: "It is a trite but true saying that just as man, in the Old Testament, is made in the image of God, so God, in Homer, is made in the image of man." But the acme of denaturalization is reached when, more than once, the term "the infinite" is applied to the Platonic ideas, and the term "the finite" to the endless flux of phenomena. Here the vague rhetoric of contemporary pantheism is allowed actually to invert the correct language and the high sentiment of Plato.

There are compensations, however, for not possessing imaginative sympathy with the point of view of the ancients, nor critical consciousness of one's own point of view. The student will find in Mr. Adam's pages a trustworthy collection of *Notizen* about the religious feelings of the Greeks. He will find a candid interpretation of particular texts, leaning to the safe, literal, conservative side, yet always keeping in view the latest hypotheses of editors and theses-mongers. He will also find, in some cases, an excellent sketch of a personage and his religious complexion. Socrates, on his private, loyal, non-philosophical side, where the extreme ideality of this thought gave way to the extreme homeliness of his piety, is naturally a sympathetic subject to Mr. Adam; and I do not remember to have read anywhere a more instructive and convincing presentation of the barefoot, obdurate, unflinching Socrates, conscious of

a divine mission, obedient to a mysterious voice, convinced that a man-loving Providence rules the course of nature, and that nothing evil can come to a good man, either in this world or in another.

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The Gospel of Pain. THOMAS J. HARDY. London: George Bell & Sons. 1908.

This is one of the books which, by starting from a new place and not foretelling the goal, try to conduct us back into orthodoxy unawares. Mr. Hardy begins with a descriptive chapter on "The Present Unrest," which concludes with the modern and, I think, decadent question, "Whether life itself contains any indication that the struggle it involves is worth while."

In the second chapter the author finds such an indication in the conduct of heroic persons who suffer. In them the spiritual life triumphs, and if it triumphs, then the convictions in which it centers must be true. One of these convictions is immortality, another is God and the possibility of our union with him. We need this conviction in the present unrest. Apart from it "men have no proper joy, and only succeed in a dull acquiescence in duty or what they term 'fate,' or else in sating themselves with pleasure till they suffer in their turn."

In the third chapter, entitled "The Supreme Paradox," the words of Jesus in his humiliation are quoted, "Be of good cheer, I have overcome the world." This is the highest example of the triumph of the spiritual life. It is higher than that of Socrates because Socrates in his triumph did not reveal so much anguish. "Expressions which never broke the silence of a Socrates only reveal how much fiercer was the conflict of Jesus, and how much more complete and sublime his victory."

In the fourth chapter, on "The Transforming Life," it is shown how much importance Jesus gave to material conditions and needs, in spite of his ideality. The indubitable fact is pointed out that marvelous transformations are wrought in whole families by a single member who becomes imbued with the spirit of Jesus. "They are lifted above poverty and suffering. They have their commonwealth in heaven. They have realized the great secret that heaven and blessedness lie within them." This is a short and wise chapter.

In the fifth chapter, on "The Spiritual Idiom," it is stated that we should not let the logical difficulties, arising out of intellectual language, get in the way of our communion with God. It is further stated that we could hardly imagine a number of persons communing with God except upon a basis of petition. It is also stated that "prayer is the solution of the social problem."

The sixth chapter is called "The Problem and the Conflict." The spiritual life gives rise to a "problem of evil," and that problem has to be discussed, but without very definite results.

In the seventh chapter, called "The Guarantee of Triumph," we are

indubitably landed on the old ground. Christ is the guarantee. Christ is divine and without sin. "There is one question which every one who sincerely wishes to arrive at the truth about Jesus Christ is bound to answer: Was he without sin? On our answer to this question turns not only our attitude towards Christ, but, it is not too much to say, our ultimate attitude towards life itself." Having saddled ourselves again with this unnatural question, we find ourselves in other familiar and inconsequent difficulties: "In what sense could a sinless person understand sin? and, what value can the triumph of a divine person have for mankind?" The atoning sacrifice, the incarnation, the triune mystery, and the other higher mathematics of a superfluous theology are brought bravely forward as we approach the end of the book.

The last chapter is "The Home of the Soul." The home of the soul is the church.

Nobody would suspect from the title or the early pages of the book where it was going to land at the end. That is the only novel thing about it.

There are, however, some beautifully written passages. We are persuaded as we watch beside the beds of sufferers "that it is no ruthless crushing of life that we see, but the release of all that is noblest and permanent from what is temporary and obstructive. We feel that it is our own blindness that is death; our own protest that is discord; and in that silent room, saddened with the somber ritual of disease, we stand face to face with immortality."

Mixed with such eloquence, we find sentences of this kind: "Saul of Tarsus dipped his pen into the fountain of contemporary knowledge, and clothed his interpretation of the cross in the garb of what was then 'modern thought.'" The book is as undiscriminating in art as it is in morals and philosophy.

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JOURNALS AND NEW BOOKS

RIVISTA FILOSOFICA. May, June, July, 1908. *Un'equivalente aprioristica delle metafisica* (pp. 289–303): S. TEDESCHI. – Meinong's theory of objects, treated with qualified approval. *La psicologia della esperienza indifferenziata di James Ward* (pp. 304–329): A. LEVI. – Continues and concludes the account of Ward's psychological theories. *Bramanesimo, Buddismo e Cristianesimo* (pp. 330–348): A. TILGER. – Religion begins when man first speculates on the problem of evil and of the finite. Brahmanism, Buddhism, and Christianity present a Hegelian sequence: Brahmanism believes in the abstract and indefinite, Buddhism in the concrete and empirical, Christianity in the union of the infinite and the finite. *Eduardo Zeller e la sua concezione storica* (pp. 349–354): A. FAGGI. – Zeller never overcame the disposition, derived from his

Hegelian beginnings, to treat the history of philosophy as a process independent of the general history of culture. *Le idee morali nella dotrina di un psicologo scandinavo* (pp. 355–363): L. M. Billia. – A laudation of the moral philosophy of the Norwegian, Kristian Birch Reinchelward Aars. *Il metodo delle matematiche e l'insegnamento elementare della logica* (pp. 364–371): P. F. Nicoli. – A protest against the exaltation of mathematics as philosophical method in so far as the former is conceived as merely deductive method. *Mach o Hegel* (pp. 372–380): L. Miranda. – Mach, in his theory that logical forms are only practical expedients without intrinsic value, has but restated Kant. Kant started from an arbitrary position. The true position is that of Hegel. *Bolletino bibliografico. Notizie e pubblicazioni. Sommari delle riviste straniere. Libri ricevuti.*

REVUE PHILOSOPHIQUE. November, 1908. *Le nouveau sentimentalisme esthétique* (pp. 441–476): Ch. Lalo. – The theories based on the conception of *Einfühlung* are unclear, not adequate for the facts to be explained, and do not rest on acceptable philosophical principles. *La philosophie des valeurs* (pp. 477–497): J. Segond. – An analysis of Professor Münsterberg's "Philosophie der Werte." *L'antipathie: étude psychologique* (pp. 498–527): Th. Ribot. – A study of the teleology of antipathy and the principal phases of its development. *Le III^e^ congrès international de philosophie:* H. Delacroix. *Analyses et comptes rendus:* A. Chide, *La mobilisme moderne:* Fr. Paulhan. E. Boirac, *La psychologie inconnue:* S. Jankelewitch. Dugard, *W. Emerson: sa vie et son œuvre:* F. Roz. J. Fabre, *La pensée moderne: de Luther à Leibnitz.* L. Dauriac. Mary Williams, *Six Essays on the Platonic Theory of Knowledge:* C. Huit. Siegel, *Herder als Philosoph:* Lalo. A. Bonucci, *La derogabilità del diritto naturale nella scholastica:* G. L. Duprat.

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NOTES AND NEWS

According to announcement, the American Philosophical Association, the American Psychological Association, and the Southern Society for Philosophy and Psychology met in affiliation with the American Association for the Advancement of Science in Baltimore, December 29–31, 1908. The retiring presidents of the three societies read their addresses, Professor Münsterberg before the American Philosophical Association on "The Problem of Beauty," Professor Stratton before the American Psychological Association on "The Betterment of Rival Types of Explication," and Professor Sterrett before the Southern Society for Philosophy and Psychology on "The Proper Affiliation of Psychology." The three societies joined in a smoker at the Johns Hopkins's Club on the evening of December 30. Officers for the ensuing year were elected as follows: For the Philosophical Association—President, Professor Hibben, of Princeton University; Vice-president, Professor Tufts, of the University of Chicago; Secretary-treasurer, Professor Thilly, of Cornell University; new members of the Executive Committee, Professor Bakewell, of Yale University, and Professor Woodbridge, of Columbia University. For the Psychological Association—President, Professor Judd, of Yale University; Secretary-treasurer, Professor Pierce, of Smith College; new members of the Executive Committee, Professor Sanford, of Clark University, Professor Lindley, of the University of Indiana, and Professor Thorndike, of Columbia University. (We regret to omit the names of the officers for the Southern Society, but up to the time of going to press these have not been received.) The sessions were well attended and marked by considerable discussion. Further reports of the meetings may be expected in subsequent numbers of this Journal.

Of interest to students of pedagogy will be the "Enzyklopädisches Handbuch der Erziehungskunde," published by Joseph Loos, with the cooperation of more than a hundred specialists, now completed by the appearance of the second volume (Vienna: Pischer's Wittwe und Sohn). It contains 1,101 pages, with many illustrations and six separate supplements. The contents cover the whole field of education. Some of the articles are monographs on the subjects.

According to the *Nation*, "to the definitive edition of the works of Descartes, published under the auspices of the French minister of public instruction by Charles Adam and Paul Tannery, there has been added a supplementary volume of correspondence (693 pages, L. Cerf)."

The Eckardt publishing house, of Leipzig, has in press an edition of selected works of Fichte, and an edition of selected works of Hegel is in preparation. A similar edition of selections from Schelling has already appeared.

Mr. H. G. Hartmann, who was appointed instructor in philosophy in Acadia College, Wolfville, Nova Scotia, last October, has been advanced to the grade of professor.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

THE HIDDENNESS OF THE MIND

I HAVE for some time been interested in accounting for a tendency among philosophers to assume that it is essentially characteristic of a mind to be accessible only to itself. This proposition is rarely supported by evidence; it is commonly held to be sufficient to call attention to it. I furnish here three instances of what I mean, one taken from a philosophical classic, the others from the writings of contemporaries:

> Now it is impossible for me to form the smallest representation of a thinking being by any external experience, but I can do it through self-consciousness only. Such objects, therefore, are nothing but a transference of my own consciousness to other things, which thus, and thus only, can be represented as thinking beings.[1]
>
> The essence of a person is not what he is for another, but what he is for himself. It is there that his *principium individuationis* is to be found—in what he is, when looked at from the inside.[2]
>
> That the mind of each human being forms a region inaccessible to all save its possessor, is one of the commonplaces of reflection.[3]

These are formulations in behalf of epistemology, ethics, and psychology of an almost universal presupposition. I believe this presupposition, as ill-defined and unreasoned as it is universal, to be the greatest present obstacle to the clear and conclusive definition of mind. There can be no doubt of the propriety of distinguishing "internal" and "external" views of the mind, and there can be no doubt of the practical or other circumstantial importance of emphasizing self-knowledge. But I do not believe that such distinction and emphasis lead properly to any generalization such as those which I have quoted; nor do I believe that they contribute fundamentally to the definition of mind. In justification of my belief I propose to consider three topics: (1) the hiddenness of the individual mind from general observation; (2) the mind's famil-

[1] "Critique of Pure Reason," Max Müller's translation, p. 282.

[2] Rashdall, "Personal Idealism," p. 383. Dr. Rashdall deplores the tendency among Hegelians to overlook this important truth.

[3] Washburn, "The Animal Mind," p. 1.

iarity with itself; (3) the characteristic difference between the mind within and the mind without. In the present paper I shall confine myself to the first of these topics, and shall aim to be on the whole constructive rather than critical. To this end I shall offer positive evidence of the mind's hiddenness, while at the same time guarding the evidence against misconception. It will appear, if the analysis be correct, that in certain respects and under certain circumstances a mind can only with great difficulty be known by another mind. It will also appear, however, that this does not imply the absolute impossibility of knowing another mind, but virtually involves the assignment of mind to that same open field of experience wherein all other objects lie. The inaccessibility of mind may be defined logically, or generalized empirically. In other words, it may be contended on general principles that the individual mind, because it contains its elements, must therefore exclude other minds from these elements; or it may be contended that the content of an individual mind does as a matter of experimental fact escape the external observer. I shall examine these two contentions separately.

1. *The exclusiveness of the individual mind logically defined.* It is essentially characteristic of content of mind, such as perceptions and ideas, to belong to individual minds. My idea is mine; and in some sense, then, falls within my mind. But it would be unwise hastily to conclude that it is therefore exclusively mine. It is clear that my idea can not be alienated from my mind, without contradiction. It must not be attributed to the *not-my-mind* which is the other term of a disjunctive dichotomy. *But it does not follow that my idea may not also be your idea.* There are many such cases. Friends are essentially such as to belong to friends, and my friend is veritably mine; but he may without contradiction become yours also. Similarly my home, my parents, my country, although in order to be what they are they must be possessed by such as me, may without logical difficulty be shared with you.

But I may seem to have overlooked a vital point. Although one thing can be the object both of my idea and of yours, can *my idea itself* be also yours? Does not the whole being of *my* idea lie in its relation to me? Doubtless Neptune may become my idea, and also yours; but can my idea of Neptune ever become an idea of yours? Now this clearly depends upon whether the determination of Neptune which makes it my idea can itself submit to another determination of the same type. There is no *a priori* objection that would not beg the very question under discussion. Here again cases from other classes of objects are very common. The sum of three and three may itself be added to three; you may paint me in the act of painting my model; the general may fear the fear of his army. And,

similarly, a thing's relation to me as my idea may enter into another such relation to you and become your idea. It will doubtless remain true that my idea simply, and your idea of my idea, will differ through the accession of the last cognitive relationship; and that in this sense my idea can not be identical with your idea. But it is impossible even to state this trivial proposition without granting that you may know my idea, which is the point at issue.

The mere fact, then, that ideas are always included within some mind, and thereby excluded from what is altogether not that mind, contributes no evidence for the absolute privacy of mind. Any group whatsoever is private, in the sense that what is in it can not by definition be outside of it, nor what is outside of it in it. But this does not prevent what is inside of it from being also inside of something else, nor does it prevent the entire group from being inside of another like group. Everything depends on the particular nature of the groups in question. Generally speaking, groups may be either intersecting or exclusive. Thus the tariff-reform group intersects the republican party, and the high-protectionist group even falls wholly within it, without any loss of identity. On the other hand, coordinate geographical areas, such as North and South America, lie wholly outside of one another. Whether minds, then, be intersecting or exclusive groups depends wholly on the special properties of mind, and not at all on the general properties of the group relation. And there can be no doubt of the ground for classifying minds among intersecting rather than exclusive systems. Indeed such a classification would seem to be necessarily implied in the general conception of social intercourse. How, then, are we to explain the widespread disposition to regard minds as exclusive?

In the first place, we readily extend to our minds the group relation which holds in the case of our bodies. There is a special sense in which things are inside and outside of the mind, but it tends naturally to be confused with the sense in which things are inside and outside of the body. The tendency is partly a misuse of schematic imagery, and partly a practical bias for the bodily aspect of the body. Suffice it here to remark that the mutual exclusiveness of our bodies is so highly emphasized that even the vaguest supposition that our minds are within our skins is sufficient to give rise to a notion that they too are wholly outside one another. Such a supposition is generally admitted to be false, but it nevertheless lingers on the scene, and not only falsifies the grouping of mind, but exaggerates the difficulty of knowing mind from the standpoint of general observation.[4]

[4] I shall return to this point in a later paper on "The Mind Within and the Mind Without."

In the second place, various motives, methodological, religious, and social, have so emphasized the difference between mind and mind, or between the individual mind and the outer world, that this difference tends to be transformed into a relation of exclusiveness. Psychological introspection, when superficially interpreted, defines a region set apart from nature and society. Religious introspection heightens the difference between the inner life and the life of the world. The problems of personal morality under complex social conditions tend to heighten the difference between individual lives. Such a proposition as "No one else can understand me" has only to become familiar and practically intensified to be converted readily into an absolute principle. Thus the *difficulty* of knowing certain aspects of another mind tends to be mistaken for the *impossibility* of the entrance of mind into mind. Proverbial difficulties easily become logical impossibilities. To avoid gross confusion it is necessary to examine the difficulties concretely and circumstantially; to point out the conditions under which they arise, and the elements of mind which they tend to obscure.

2. *The empirical difficulty of knowing another mind's content.* Beyond question the content of an individual mind at any given time may be successfully hidden from general observation. But this in itself does not imply any general proposition to the effect that a mind is *essentially* such as to be *absolutely* cut off from such observation. It may be that your inability to discover what I am imagining, thinking about, or remembering, is only like the assessor's inability to discover the amount of my property; and no one has asserted that property is essentially knowable only to its owner. Let us examine the circumstances.

In the first place, it is evident that under favorable circumstances you have no difficulty in following my mind. Where, for example, we are engaged in such intercourse as involves a bodily dealing with physical objects it is as easy as it is indispensable for each to know what is in the mind of the other. The objects themselves here provide mutually accessible content in a manner that is unmistakable. A clear case in point is the exchange of currency for merchandise; but to illustrate the experience exhaustively would be to traverse nine tenths of life. Such mutual apprehension of the physical things which you and I have in mind is the condition of all intercourse between us; we could not shake hands without it.[5]

[5] It is customary to create a difficulty even here by persistently looking for the content of mind within the periphery of the body instead of in the environment where it properly belongs. I am reserving specific treatment of this misconception for my later paper on "The Mind Within and the Mind Without."

There is another way in which you readily follow my mind, namely, through my verbal report. We do not often sit down and deliberately disclose our minds to one another; more commonly we use language to the end that we may together think the same things. But if you are a psychologist, or an interpreter of dreams, I may "tell" you what is in my mind. Now it is frequently assumed by the sophisticated that when I thus verbally reveal my mind you do not "directly" know it. You are supposed directly to know only my words. But I can not understand such a supposition, unless it means simply that you know my mind only *after* and *through* hearing my words. If it is necessary for you to take a book from the shelf and turn over its pages before you can discover the date of Kant's birth, or walk across the street before you can discover the number of your neighbor's house, do you therefore not know these things directly when you do know them? And if you must wait until I tell you before you know whose image is in my mind, do you therefore not know the image directly when you do know it? If not, then what *do* you know directly when the matter is concluded? Surely not the word, which, having served its turn, receives no further notice. It is not the word which is communicated except in the wholly exceptional cases in which the word is not understood and so does not fulfil its function. And it is certainly implied in all of our subsequent action and intercourse relating to the image that we have access to it jointly, just as we do to our money and our lands; that you know it now even as I know it.

It is important to labor under no misapprehension concerning the general function of language. Language does not arise as the external manifestation of an internal idea, but as the means of fixing and identifying abstract aspects of experience. If I wish to direct your attention to the ring on my finger, it is sufficient for me to point to it or hand it to you. In seeing me thus deal with the ring, you know that it engages my attention, and there occurs a moment of communication in which our minds unite on the object. The ring figures in your mind even as it does in mine; indeed the fact that the ring does so figure in my mind will probably occur to you when it does not to me. If, however, I wish to call your attention to the yellowness of the ring, it will not do simply to handle it. The whole object will not suffice as a means of identifying its element. Hence the need of a system of symbols complex enough to keep pace with the subtlety of discrimination. Now the important thing to bear in mind is the fact that as a certain practical dealing with bodies constitutes gross communication, so language constitutes refined communication. There is no difference of objectivity or subjectivity.

In the one case as in the other mind is open to mind, making possible a coalescence of content and the impinging of action on a common object.

But let us now consider the circumstances which hide the content of my mind from your observation. The most important general fact is this: that your observation will be baffled *just in so far as my dealings with the content of my mind are not peripheral.* Contrary to a common philosophical opinion, my purpose, intention, or desire is least likely to escape you. This element of my mind is revealed even in my "molar" action, in the motions of my body as a whole. Your apprehension of it is as sure and as indispensable to social relations as your apprehension of the physical objects that engage my attention. The content of my purpose, that is, the realization proposed, and my more or less consistent devotion to it, are in your full view, whether you be a historian of character or a familiar companion. It is not, then, the desiderative element in mind that escapes observation, nor is it any such typical element, but all content in so far as the mind's dealings with it do not reach the visible exterior of the body. But what is implied in this very statement?

In the first place, we imply that the content in question is such as to be knowable by me if I can identify it. Commonly doubt exists only as to which of several things, all plainly known to you, is at the moment known to me. I may tell you, and when I do one is selected and the others fall away. Or you may conjecture, and if your conjecture be true you possess the content, but without being sure of the relation to my mind.

But in the second place, and I here anticipate a charge of grave omission, the relation of the content to my mind must be supposed to be *objectively and discoverably there,* even when I do not acknowledge it by a verbal report. It is impossible to formulate a case of memory, for example, without affirming a connection between the past event which contributes the content and the locally present mind that is recalling it. If I am in fact here and now recollecting a meeting with President Cleveland which took place at the White House in 1894, a complex is defined the essential terms of which are in your plain view. And the connection must be homogeneous with the terms. The past event as it was must be engaged or dealt with by me as I stand before you. In other words, the original perceptual response must be *continued into the present.* But this is possible only through the identity of the nervous system. The link of recollection, connecting past and present, lies in a retrospective functioning of my body which can be accounted for only by its *history.* And this is as accessible as any natural or moral process. When you

know that I am looking at the moon, the salient facts are before you, the focalized posture of my body and its organ of vision, the concentration and consistency of my action, and, most important of all, the moon. In the case of my recollection of President Cleveland the facts are more complicated, and even in part inaccessible, but equally with the facts just cited they are in the context of your possible knowledge. They consist in such elements as my central attentive process, certain persisting modifications of my cerebrum, my original dealings, practical and neural, with President Cleveland, and—President Cleveland himself.[6]

For purposes of further illustration, consider the case of disguised perception. I am watching you "out of the corner of my eye," hoping to deceive you as to my real thoughts. If the strategy is successful it proves that I can render equivocal the evidence you commonly rely on. But does any one seriously suppose that the direction of my thoughts is not discoverably there in the retinal and nervous process responding to your body, and in my intention to deceive? Where my mind is the object to be known, I can embarrass the observer because I can control the object. I can even make and unmake my mind. As you seek to follow my thoughts, I may accelerate them or double on my tracks to throw you off the scent. But I enjoy the same advantage over you if you are an assessor seeking to know my property, and neither in the one case nor in the other is it proved that the facts are not there for you to know as well as I. Indeed the special qualifying conditions to which we are compelled to refer when describing the hidden mind leave no doubt that the difficulties in this case are essentially like the difficulties which counter and thwart any cognitive enterprise. Some things are more difficult to observe than others, and all things are difficult to observe under certain circumstances. This is true of mind in no mysterious or unique way.

I grant that there is much more to be said by way of clarifying the issue. It is only just to admit not only that the mind may be hidden from the observer, but also that it is in certain respects peculiarly accessible to itself. This, of course, does not prove that only I can know myself, or even that I can really know myself at all, but may mean simply that certain data can be collected more conveniently by me than by anybody else. It is only just to admit also that mind as observed introspectively differs characteristically from mind as observed in nature and society. But this does not prove that either is not directly known, or that either is not the real mind. Every complex object presents its parts in a different order when

[6] The seeming paradox of a *present* knowledge of *past* events I have discussed in a previous paper, this JOURNAL, Vol. III., p. 617.

approached in different ways, but in the object as wholly known these parts fit and supplement one another. These are considerations to which I hope shortly to return.

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WHAT IS PERCEPTION?[1]

IN criticizing my discussion of perception, two of my reviewers have called attention to the fact that I have omitted anything but the most casual mention of the dependence of perception on past experience. This they consider to be a defect in the treatment, in view of the fact that no present experience can be fully explained without reference to the past. I refer to these criticisms for the purpose of meeting them with the most explicit statement that in my view perception should be discussed without bringing in, as has been the custom, a mass of revived factors. I am prepared to undertake the defense of the position that percepts do not contain revived elements in any such fashion as appears in the conventional discussions.

A concrete illustration will make this antithesis perfectly clear. In reading the familiar words of every-day language, we are constantly recognizing that these words have a value and meaning for our mental lives which can be explained only by reference to the earlier contact which we have had with them. The earlier experiences which I have attached to such a word as "man," for example, give that word a value for my consciousness which is totally different from the value which it would have for the consciousness of a child who had not learned to read, or for the consciousness of a foreigner unacquainted with our language. But when the psychologist attempts to account for this present interpretation of the word "man" in my consciousness by saying that there is a train of revived elements brought forward from earlier experiences, he falls into confusion. The important fact is that here and now my consciousness is such as to give meaning and value to this word. Quite apart from the history of the matter there is a present situation to be understood and explained, and it mixes matters badly to talk about past experiences which are not now present when what is supposed to be under discussion is the present experience and its immediate characteristics.

Let us return to our concrete case and follow it through several stages of its development. When the individual who is learning to

[1] The first paper of this series appeared in Vol. V., p. 676, of this JOURNAL.

read is first brought into contact with the printed word "man," he is given at the same time the sensory impression of hearing which comes from the pronunciation of the word by his instructor. The auditory impression in this case is immediately used by the individual who is learning the word as a guide for his own articulation. He learns to react in such a way as to adjust himself to the auditory sensations which he receives from his instructor's voice and his own. Through the sound he thus comes to attach to the visual impression a form of reaction which would not have been suggested by the visual impression itself. As soon as the habit of articulation is once established, however, the sound impression loses its importance and may be dropped altogether from a description of the individual's experience with the printed word. The elements of the situation as they appear in the case of the developed reader are a visual impression followed by a reaction of articulation, and in some cases the articulation is reduced to the lowest possible terms. We have evidence in abundance that the reactions of articulation are of great importance in explaining the present perception of a word even when they are so reduced in intensity as to give rise to no sound whatsoever. It would, however, be very far from the truth to contend that the visual impression arouses first an auditory memory and then a process of articulation. The auditory factor has served its purpose and disappeared altogether, leaving behind its consequences, but no remnant of itself as a concrete factor in the situation.

Another illustration which may be carefully examined is that of continuous vision in the monocular field in spite of the blindspot. Here, as those writers tell us who insist upon a formal explanation of vision, certain factors of experience are actually added to the stock of present sensory elements, so that the field of vision is filled out by these added factors. Again I take the opportunity of emphasizing very clearly the antithesis between such a position with regard to vision in the blindspot and the position which I have attempted to defend. The effect for visual perception is, indeed, like that which would be secured by adding to consciousness certain sensory factors which are demonstrably not present. But this effect of continuous vision is no sound basis for the argument that the method of attaining the effect is the particular one assumed. The same effect may here, as in so many other cases, be produced by a variety of different methods, and it has been my purpose to call attention to a method which seems to me to find very much more in its support than that which has been commonly accepted. I should say that the interpretation of the visual field as continuous is not at all a matter of adding content factors, but rather a matter of the use to which the given content factors are put. In other words, without

developing any elaborate machinery of added factors, we may explain continuous vision by saying that the sensory factors which are given are all that are necessary to call out in consciousness the complete interpretation. Continuity does not exist as a matter of sensation at all; one could add factors to all eternity and get no continuity. It exists rather as a general result of the constant habit of treating such factors of experience as are given in sensation in terms of a larger recognition of their value and effect upon active life. Every individual has learned by experience with the world that the field of vision presented to the single eye is continuous, and that it may be so treated. We never make any minute analysis of each particular field of vision, but we go forward in every case with the general mode of interpretation justified by experience. A closer examination of the phenomena themselves will show that this statement is defensible in all detail. Suppose an observer is looking at a field colored by some shade of color which he has never seen before. This is no radical assumption, for some of the minor shades of color certainly could be found which would be novel to any individual. Such a field of color viewed monocularly would undoubtedly be interpreted as continuous in spite of the fact that the observer had never before had this particular shade of color presented to him. We should then find ourselves obliged to say, if we insisted on finding factors with which to fill in the blank space, that the filling in of the blindspot consists in this case, not in the borrowing of elements from the past, but rather in the bringing over of elements from the surrounding parts of the field of vision to the blind area. In other words, the sensory factors which we should assume, since in this case there would be no legitimate appeal to past experience, must be borrowed from the present surrounding field. It thus appears that the formula of remembered sensory factors is altogether indefensible even in the cases sometimes used in support of such a formula. It is somewhat more difficult to give an equally pointed argument for the abandonment of the sensory formula altogether, but when once the formula of borrowed factors is weakened, it will easily give place to a formula of functional interpretation. Thus, it is much simpler to assume that the blindspot is wholly neglected and that the interpretations of continuity are based upon what is given, the blindspot being neglected, than to assume the more elaborate process which does not correspond to any observable fact. We do not know from direct observation that we fill in the blindspot. The burden of proof lies with him who asserts that we do.

The same may be said of a great variety of other cases. Take, for example, the familiar case of the person who overlooks a false letter in a misprint, or who recognizes without hesitation a word

from which a letter has been omitted. The formula which has been adopted by many writers for such cases as these is that the absent letter is supplied out of earlier experience, or that the present visual image which is incorrect is entirely neglected and an element derived from past experience substituted for it. The fact is that there is no need of any such elaborate assumption. Indeed, it would be a very doubtful basis for general explanation of our recognition of a word to assume that a present visual image can be neglected in favor of a much fainter element drawn from past experience. The simpler treatment of such a case is to recognize a general fact that the visual perception of words does not deal in detail with each one of the letters. We recognize words, and even phrases, in a single glance, and many of the elements are so vague that they may be treated as entirely passed over in ordinary perception. To be sure, when we are learning to recognize a new word, the details are all of them subjects of careful examination. The details are at that time vividly presented and constitute a complex of factors, each element playing its part in the building up of the total complex. As the process becomes more and more familiar, many of these elements recede into the background of consciousness. We now select those characteristics of the word as a whole which are necessary for its recognition. These characteristics may be the general length of the word together with a few of its more conspicuous letter elements. These few salient characteristics are the sensory factors upon which we depend for our present recognition of the word. To assume that the details continue to be used in later life in the same vivid way in which they are used while we are learning the word, is to overlook one of the most essential changes in mental development. And yet this seems to be exactly what many theorists have done when they try to make us believe that each time we come in contact with a word we fill in all of the sensory elements that have ever been utilized at any time in building up the percept of this word.

The fact is that formalism without limit has come into our psychology with all these hypotheses about added memory elements and added sensory factors. One gets a notion from reading the ordinary text-book on psychology that a percept is a kind of rationally constructed argument with oneself in which one builds up a huge complex of factors into an elaborate mental process.

Pausing for the moment in our criticism of the usual doctrine of perception, let us call attention not merely to the weakness of the theory of "added factors," but to the dangers for the elementary student of introducing him to all this hypothetical constructive process. Suppose it is said that the doctrine of factors derived from past experience is at least picturesque and keeps the student alive to

the history of each perceptional development. I should say that even this reference to the development of present percepts is untimely, for it fills the mind of the student with a formal kind of doctrine which makes him approach every mental process with a false atomistic notion of its probable composition. He gets the notion that one is at liberty to introduce into his accounts of experience any elements that seem to him necessary for an easy explanation of their present composition. A kind of imaginary description of what an experience might be in order to fit the theory is substituted in the student's mind for a rigid demand that the description of mental processes conform to careful observation.

This statement is borne out by the history of psychology, for the conventional treatment of mental life has been atomistic and formal. Elements have been emphasized rather than functions. Indeed, we find it difficult to introduce into our current discussions of mental processes anything except the most definite and formal concepts. Witness the fact that we have been listening of late to a discussion which has been confused because there seems to be no way of defining a common functional fact of mental life in anything but negative terms. We hear much about imageless ideas. Such phrases represent what is undoubtedly a perfectly legitimate reaction against the formalism of the earlier description. They indicate that in dealing with complex ideas there must be something besides the repetition of earlier sensory factors. And yet the writers who use such negatives find it extremely difficult, if not quite impossible, to explain the basis of these imageless ideas. Certainly there must be some sort of content in the mind when, for example, one makes a voluntary movement and is not conscious of any definite sensory picture as the basis of the movement itself. Appeal is sometimes taken to some such general formula as the "total situation" as the basis and motive of behavior. This phrase "total situation" certainly must include certain definite elements of experience which must be classified as sensory processes, or at least as recalled ideas. The mistake consists in the usual tendency to make sensory factors or ideational images the only possible phases of consciousness. The fact is that every experience is made up in part of phases which are totally different from those which can be described by the term image. The simplest perception of an object which is presented to the eyes contains a great deal more than the sensory elements of which it is composed. It consists of certain forms of arrangement and certain tendencies toward reaction which must be recognized by any student who would work out an adequate account of these processes. In the same way any idea contains very much more than the image which has usually been described in the discussion of

memory processes. There may, indeed, be an image present, but it is usually the least significant part of a whole situation. It makes very little difference when I think of my friend whether I have a full image of his personal appearance, or even a vague outline; it is enough that the faintest image basis should be present for the elaborate processes of thought and action which the idea aroused in me. To call these processes of action and arrangement imageless is very far from the mark. They are, indeed, phases of consciousness which differ from sensory images or memory images. They are functional aspects of experience. As such they are not separable from content factors altogether, nor can their significance for mental life be understood without a recognition of their relation to the content factors of experience. To cut off, for example, the moment of mental activity which immediately precedes a voluntary action, and to say that this moment of consciousness is devoid of content factors because there is no image of the reacting organ, is to fail to recognize the fact that voluntary behavior is the final stage of a total process which includes at its outset some form of mental content. Following upon the first presentation of content there may have been a most elaborate process of readjustment and reaction. This elaborate process is not to be classified in terms which are appropriate only to its first stage. To say that any phase of the process is non-sensory seems to be an effort to set something in opposition to what is expected. The very use of the term would seem to indicate that there is a lingering desire on the part of the student to recognize sensory elements as the fundamental facts of experience. The whole situation could be much more adequately dealt with by recognizing from the outset that every situation is made up of phases which are sensory and others which are utterly indescribable in sensory terms. These latter should not even be called non-sensory since it is not in keeping with their nature to compare them with sensory elements.

Once the possibility of recognizing a wholly different type of explanation is admitted, the conscious process will be treated as a complex made up of sensory elements and other processes which are functional in character and deserving of a separate treatment. We shall then see that any particular phase of experience may be described either with reference to its sensory facts or with reference to its functional phases of activity. When accordingly the sensory elements are conspicuous in a mental process, we shall recognize the conspicuousness of these elements as an important characteristic of the whole process. When, on the other hand, the sensory processes are relatively less conspicuous, we shall treat it as a part of our psychological problem to explain why the sensory factors are thus insignificant. The balance between the two types of mental activity

will thus come to be a problem in itself, and certainly one of the very greatest moment to explanatory science.

The formula which will be found to be useful in the adjustment of relations between sensory processes and other phases of consciousness is a formula based upon the recognition of bodily activities as important conditions of mental life. Whenever a sensation gives rise to a certain reaction, the importance of that sensation for the individual is determined not by its own quality and intensity, but rather by the relations into which it is brought through its tendency to arouse reaction. The reaction which a particular individual will tend to give to a sensory impulse is undoubtedly a matter of development. All of the instincts are important conditions of consciousness because they are the sources of reactive tendencies, and all of the acquired habits of the individual are significant for the same reason. Whether a given mode of reaction and its consequent effects upon conscious organization are due to instinctive organization or to some kind of personal experience which has resulted in a habit, the importance of the motor processes for the present percept is clear. The present percept is not made up of the past experience or the stages of development which produced the habit, the percept is a simple direct process of recognition just because of the present conditions which now exist. It is the immediate condition which interests us in explaining the nature of perception. If we are led off into a discussion of how the percept came to be what it is, we shall make the percept seem to be more complex than it really is.

Let us consider the definite case of space perception. Although such perception is a product of long individual development and adjustment, it is at the present moment conditioned by the fact that a given sensation arouses a definite reaction in its own direction. It would confuse the mind of a student to say of present space perception that it is made up of a large number of past experiences with different bodily adjustment. Whereas to say that the immediate localizing of a present sensation is the conscious result of a present motor tendency, is a direct and altogether valid formula. The source of such a motor tendency is often remote, as, for example, in the case of the eye. There can be no question that there is a reflex tendency born in every individual so to adjust the eye that images fall upon the fovea. Our space perception is in a very large measure conditioned by this reflex tendency, and in so far forth it is quite appropriate to say that our present space perception depends upon an innate tendency in the nervous organization. This innate tendency is in no sense of the word a sensory element, nor is it an idea or memory image of any kind whatsoever. Again there are certain personal experiences which have supplemented the innate reflex

tendencies. Such personal experiences as grow out of the repeated contact with familiar objects in the environment have perfected our adjustment of the relation between visual impressions and the movements of our right and left hands and other active organs. These gradually accumulated personal experiences have been added to the innate tendencies of behavior in such a way as to build up a single system of reactions conditioning a single space in perception. It is quite impossible to see how a final scheme of spatial arrangement can include innate factors and also those derived from personal experience if it is not recognized from the outset that spatial arrangement is something other than a series of memory images. Spatial perception is the product of a system of reactions. Whatever the source in the past, the common outcome of all of these different influences is a definite mode of present arrangement of sensory factors in a spatial scheme dependent upon a present system of motor tendencies. To describe the nature of this present mode of adjustment in adequate terms is a psychological problem very much more urgent than to go into the elaborate discussion of the sources of this present mode of adjustment.

One final statement which can be made in support of the foregoing argument is that an overemphasis of ideational processes in the earlier psychology has vitiated in very large measure the whole treatment of perception. Perception has again and again been treated as if it were a process made up of elaborate forms of reasoning. To hold that the perceptual recognition of an object which stands before me is the result of anything like an elaborate form of reasoning is to grossly misunderstand the economy of mental life, for percepts are advantageous just because they are simple and direct. It is to do violence also to the fact now so fully recognized in psychology that ideas are relatively very late forms of mental action. The animals are supplied with all of the perceptual forms of consciousness though they have not developed ideas, or language, or any of the high types of abstraction. How can they be conceived to have developed their simple perceptual processes if the formula for these processes is to be worked out in terms of remembered factors? One interesting question that suggests itself in this connection is the question how animals become so highly adapted to spatial differences, as contrasted with man, who seems to acquire the spatial form much more slowly and very frequently less accurately. If space were always to be recognized as the product of ideas, we should have to assume in certain birds, for example, a very high type of mental development. What we can recognize, on the contrary, is that the perception of animals and the perception of man may issue in similar forms of mental adjustment in the end, but may

reach these ends by wholly different routes. The animals show instinctive recognition of spatial relations as a result of organized racial reaction. Man has to work out many of his reactions individually. To demand a single formula for the two processes of development is to confuse the final stage of the evolution with its earlier stages.

These illustrations make clear the position which I hold regarding the nature and treatment of perception. Perception is a compact, immediate process dependent for its explanation upon present conditions here and now at hand. To depart from this formula tends to destroy clearness of thought and exposition.

CHARLES H. JUDD.

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SOCIETIES

THE EIGHTH ANNUAL MEETING OF THE AMERICAN PHILOSOPHICAL ASSOCIATION

THE eighth annual meeting of the American Philosophical Association took place, in conjunction with the sixtieth annual meeting of the American Association for the Advancement of Science, in Baltimore, at the invitation of the Johns Hopkins University, on December 29, 30, and 31, 1908.

The official social functions were a reception by President Ira Remsen, of the Johns Hopkins University, to members of the association and affiliated societies in McCoy Hall on Monday evening, and the joint smoker of the American Philosophical Association, the American Psychological Association, and the Southern Society for Philosophy and Psychology at the Johns Hopkins Club on Wednesday evening.

Three presidential addresses were read before the associations. The Philosophical Association adjourned, as usual, to hear the address of the President of the Psychological Association, on Wednesday afternoon. Professor Stratton spoke on "The Betterment of Rival Types of Explication" in psychology, making a broad-minded appeal for an open-door policy. In the evening, the President of the Philosophical Association, Professor Münsterberg, addressed a large audience in the assembly room of the Baltimore City College, in his usual eloquent fashion, on "The Problem of Beauty." And at the close of the last session, on Thursday, the association listened to the President of the Southern Society for Philosophy and Psychology, Professor J. Macbride Sterett, who spoke on "The Proper Affiliation of Psychology—with Philosophy or with the Natural Sciences?"

The meetings were, for the most part, interesting and well attended, but the opinion was generally voiced that there were too many presentations at each session and that the previously prepared discussions created a formal and unsatisfactory atmosphere. It would be advantageous if abstracts could be circulated more freely beforehand and the discussion trusted to the spontaneity of the moment. Logical problems had by far the greatest prominence, being represented by more than half of the papers. Pragmatism, except for some criticisms, appeared only in the form of a philosophy of development, but as such was of considerable importance. Ethics was represented by two studies, both at the last meeting; theology had one paper, the first day; and, except for Professor Münsterberg's address, esthetic problems did not appear at all.

The first paper of the regular sessions, by Dr. Karl Schmidt, "Concerning a Philosophic Platform," urged the establishment of a basis of agreement amongst philosophers in the form of a problem to which progressive contribution might be made, so that philosophy could attain a growth similar to that of science. A like note was struck at the last meeting by the "Doctrine of Histurgy," of Mrs. Franklin, in which was commended a fixed group of principles for philosophy, selected by a consensus of the competent, and fitted together to constitute a woven tissue or fabric of truth.

Professor Spaulding followed Dr. Schmidt with a paper on "The Postulates of a Self-critical Epistemology." After pointing out that epistemological theories, as knowledge, usually contradict their own principles, Professor Spaulding proceeded to expound the postulates of a self-critical theory and to find such a theory in evolutionary realism. A short, but lively, discussion followed. Professor Woodbridge interpreted the first postulate "that there must be postulates" as a denial of the possibility of epistemology, or rather the reduction of it to logic. This view was so well seconded that it seemed as if epistemology was to vanish from philosophy, and Professor Spaulding had to take refuge in the position that at least there are problems involved in knowing and the solutions of these problems must be based on hypotheses.

Miss Rousmaniere contributed a study in inductive logic, courageously undertaking to provide "A Substitute for Mill's Methods in an Introductory Course." As scientific investigation does not actually follow the course layed down by Mill, a new account based on recent science, Pasteur's "Life and Letters," is formulated. Discussion showed approval of the plan, but a desire for further generalization and development of the results.

As representative of theological problems, Dr. Hayes described our knowledge of God as the result of inference closely analogous to

that whereby we attain our knowledge of men. It was objected that the latter knowledge is acquired through direct perception of bodily expressions, and Dr. Hayes replied that we could know men equally well through their works.

Mr. Steele's "Naturalistic and Theoretic Thinking" touched upon so many great philosophical problems that it proved fruitless in discussion.

On Wednesday morning there was a large attendance and a somewhat less scattering of interests. Dr. Ewer's "Paradoxes in Realistic Epistemology" defended dualistic realism on the ground that its paradoxes are not genuine contradictions although the facts may be puzzling. Perceptions need not claim to be perceptions of present objects, and are, in fact, always perceptions of a more or less remote past.

Professor Albee exposited the "Present Meaning of Idealism." Prefacing his remarks with the assertion that subjective idealism and materialism are dead, he defined objective idealism as the philosophy that starts with experience and analyzes its two complementary parts, the subjective and the objective. Mind is merely one side of experience when experience is regarded as an organic whole. The distinction between realism and idealism is vanishing with the increasing recognition of experience as the only reality. Mr. Pitkin asked the pertinent question, If idealism is no longer a means of explanation, but merely a method, why retain the name? to which was replied, The name is to commemorate its idealistic ancestors.

The discussion of the afternoon was tensest over Professor Creighton's criticism of portions of Professor Baldwin's "Genetic Logic"—under the title "The Notion of the Implicit in Logic." The genetic series always demands something new; it is, therefore, not explanatory, and its underlying identity is not clear. Professor Baldwin explained that both teleological and mechanical analyses depend upon imposing outside categories on a series, while real explanation must be implicit in the series. Both teleological and mechanical explanation are possible, but they are not exhaustive. Time limitations cut off the discussion without mutual understanding having been reached.

With respect to "The Field of Propositions that have Full Factual Warrant," Professor Marvin pointed out that generalization in the factual field is extremely limited. Our factual propositions quickly become postulates. The facts form a logical bridge between the existential and the non-existential; they suggest principles and guide development, but all inference is deductive. Induction goes by leaps.

Dr. Sheldon's "Analysis of Simple Apprehension" was a psychological study of presentations having objective reference, and con-

cluded that the psychological facts give no justification of the logical use of the subject-predicate relation. The sufficient definition of the simplest cognition is a content in relation, plus a disposition to believe. Mr. Pitkin pointed out that such psychological analysis is not fruitful, for it is not itself indisputable.

On Wednesday afternoon the first paper was omitted on account of the absence of Professor Leighton, but even so the meeting was hurried. "The Outline of Cosmic Humanism," by Dr. Doan, recalls an early suggestion of Charles S. Peirce, and was aptly characterized by the last speaker of the day, Professor Hume, as Schopenhauerian pragmatism. Professor Hume spoke of "Pragmatism in its Relation to the History of Philosophy," and drew the conclusion that pragmatists ought to pay more attention to the meaning of will; and if they pass beyond merely human will, Schopenhauerian and Fichtean pragmatisms are possible, and pragmatism may even find itself functioning as absolute idealism.

Professor Montague, on "The Good, the True, and the Beautiful," also criticized the pragmatic movement. The true can not be subordinated to the good, for the true arises from the conformance of a judgment to environment, the good from the conformance of environment to desire, and the beautiful from the harmony of an organism with its environment; and these concepts are, therefore, essentially independent.

The best received and most brilliant paper of the afternoon was Professor Moore's "Absolutism and Teleology." Absolutism complains that the evolutionary point of view can furnish no criterion of progress, but absolutism, although it assumes a goal for the universe, admits that no finite individual can know what that goal really is, and so it gets no help from the assumption. Professor Hibben was inclined to demur on the ground that the two points of view, absolutistic and developmental, are not mutually exclusive.

Thursday morning was devoted to a discussion: "Realism and Idealism." Although expressing doubts as to the utility of the discussion, Professor Royce appeared as the first speaker. He stated his well-known form of idealism. The real world is nothing but the true interpretation of the surroundings in which I find myself. To reject idealism is to declare that your world is interpreted in a way which is not an interpretation. Professor Royce spoke rather sharply of those who are always prating of experience as if experience were something inflexibly given, whereas immediate personal experience is inadequate, and human experience is only an ideal construction. The real world is postulated, or, in the language of Professor Münsterberg, acknowledged. The essence of idealism is to hold that the world is real only as an interpretation of experience. Therefore, he

added, all idealism's opponents will verify this thesis and appear as idealists.

Professor Dewey, who followed, claimed to avoid this consequence by remaining within specific concrete limitations. He showed that, in its history, the logic of description has always side-stepped idealism and remained realistic. It is only the generalization of logical motives that leads to absolutism.

Professor Woodbridge followed with the statement that idealists make the reflective character of consciousness primary, while realists make it secondary. He then developed his realistic theory of the nature of consciousness, affirming the existence of both qualitative and quantitative causes in nature and explaining the presence of sense organs as an apparatus developed to bring about responsiveness to qualitative causes. This responsiveness results in qualitative effects which we call sense qualities. These qualities, however, do not constitute consciousness. It is only when reactions due to the coordinating and unifying function of the nervous system supervene upon these qualities that consciousness exists.

Professor Bakewell criticized at some length the popular interpretations of Berkeley. Realists must retain reality within experience; the solid ground of fact resolves into the shifting ground of experience, and idealism is differentiated only by the stress it lays on the subject-object relation and the activity of thought.

Professor Norman Smith criticized vigorously both realists and idealists for shirking the problem of the relation of mind and body. Objective idealism merely emphasizes the relation of subject and object, but does not touch the psychophysical problem. Professor Dewey's realism vacillates between subjectivism and materialism, and for Professor Woodbridge, also a materialist, the relation of mind and body is passed over as a needless metaphysical puzzle. Avenarius and Bergson have been obliged to make this problem central, and Professors Dewey and Woodbridge ought to do so.

The papers were then open to discussion. Professor Ormond expressed his doubts of there being any real issue at stake. Professor Dewey asked that the label materialism be defined, and if he is a materialist, what of it? The discussion might have been more interesting if there had been some attempt to answer these questions. Professor Woodbridge showed some surprise that he should have been thought to have centered his discussion on any other problem than that of the relation of mind and body, and did not appear overcome by the criticism that his view made certain problems needless metaphysical puzzles. Professor Smith appealed to the audience as to whether Professor Woodbridge had said anything about consciousness. The discussion was summed up by Professor Royce as veri-

fying his prediction, and especially Professor Dewey had made use of an idealistic scheme of past and present in his historical remarks. Professor Woodbridge merely put himself out of the world and described how it looks to one who is not in it. The problem of mind and body is to be solved through the fact that the brain itself is only real as an idealistic interpretation.

Several interesting things must have appeared to an onlooker in this discussion. In the first place, as had already been suggested by Professor Albee's paper on Wednesday, idealism has taken on a new meaning and is not so different from realism as might have been supposed. It was also interesting, within twenty-four hours of the time we had been told by Professor Albee that materialism was dead, to find it reincarnated in Professors Dewey and Woodbridge—or shall we take Professor Albee's statement and Professor Smith's criticism as the premises of an enthymeme of the third order? The underlying differences between the idealists and the realists might, perhaps, have been more clearly brought out by a discussion of absolutism and non-absolutism, as such differences were evident although not explicitly expressed. In general, the idealists seemed more polemical and were prepared to start from a preconceived interpretation of the universe as a whole, and the realists were too busy developing their concrete problems to indulge in as much polemic as would have been desirable. The idealistic contributions to thought were limited necessarily to the exposition or the filling in of already existing systems, almost to deductions of consequences, while the contributions of the realists took the form of a growth toward a system not yet fully defined.

Wide-spread fatigue, due to the strain of the previous meetings, was manifest on Thursday afternoon, and the pressure of time was greater than ever. Considerable interest was aroused by the paper of Dr. Isaac Husic, substituted for the one announced, on "A Plan for a Philosophical Lexicon of Philosophic Terms in Greek, Syriac, Arabic, Hebrew, and Latin." It was voted informally, as an expression of interest, that a committee be appointed by the Chair to consider the value of the work, and to report on it to the association in the business meeting of next year. Professors Royce, Newbold, and Gardiner were appointed.

The result of Professor Singer's "Reflections on Kant's First Antinomy" was that Kant's discussion is adequate in so far as it deals with space, but inadequate as to time. A finite past time is intelligible, for there are no moments in a mechanical system in a state of complete rest, but the fact of a finite or infinite past can only be settled on experimental grounds. An infinity of experiments is necessary, so the antinomy holds good.

The ethical discussions of the meeting were presented by Dr. Cohen and by Dr. Mecklin. Dr. Cohen's paper, on "Kant's Doctrine of the *Summum Bonum*," was an interpretation and defense of Kant's union of goodness and happiness. Dr. Mecklin's "Idea of Justice in Christian Ethics" contrasted the Greek view of justice as an attribute of the state with the Christian attribution of it to the individual. Justice is not a Christian virtue, for it conflicts with self-sacrifice, and consequently holds a place only in the last judgment.

Mrs. Franklin's paper has been mentioned in connection with Dr. Schmidt's in the account of the first session.

At the business meeting of the association a vote of thanks was offered to the Johns Hopkins University for the courtesies shown the association. The following officers were elected: President, Professor Hibben, of Princeton University; Vice-president, Professor Tufts, of the University of Chicago; Secretary-treasurer, Professor Thilly, of Cornell University; new members of the Executive Committee, Professor Bakewell, of Yale University, and Professor Woodbridge, of Columbia University, to succeed Professor Lord, of Columbia.

Dr. Cunningham, of Middlebury College, Professor Wilde, of the University of Minnesota, Professor Payne, of the University of Virginia, and Professor Pratt, of Williams College, were elected members of the association.

It was voted to leave the decision as to the place of the next meeting of the Philosophical Association to the Executive Committee, with an expressed preference for New Haven.

The committee on the publication of important works of early American philosophers reported that the Columbia University Press would probably be enabled by friends of the University to publish the "Elements of Philosophy," by Samuel Johnson, the first President of Kings College, edited by Professor Woodbridge, under the auspices of the name of the association. The committee was asked to continue its work by encouraging other universities to do likewise with respect to appropriate works, and $75 from the funds of the association was set aside to aid in the preparation of a bibliography of early American philosophy.

It was resolved that a committee be appointed by the Chair to cooperate with similar committees from the Historical Society and other societies in getting philosophical research before the Carnegie Institution in Washington under the same conditions as other scientific work. And it was also resolved that a committee be appointed to cooperate with similar committees from other societies to influence the Committee on Ways and Means in Washington to the end of

having scientific books, printed in English, admitted at the Customs House free of duty.

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COLUMBIA UNIVERSITY.

REVIEWS AND ABSTRACTS OF LITERATURE

La philosophie moderne. ABEL REY. Paris: Ernest Flammarion. 1908. Pp. 369.

It is the purpose of this book to present "a summary statement of the form which the great problems of philosophy assume at the present time." The original physiognomy of modern philosophy is a result of the intimate connection between philosophy and science. Instead of ignoring the accomplishments of scientific activity, according to the manner of the preceding epoch, the philosophy of to-day takes as a point of departure of its inquiries the results of positive knowledge. Leaving aside all isolated attempts at solution, we have the general tendency of theoretic activity expressed in the antithesis of "scientism" and pragmatism. Either scientific method is the only path to the attainment of truth (positivism, rationalism, "scientism") or there are other sources of true knowledge, such as "religious feeling, moral ideas, sentimental intuitions." According to this latter point of view, science is an artifice whose sole validity consists in its practical utility. The current of ideas representing this movement is synthetized under the expression "pragmatism." It is the essential thesis of this study to oppose "scientism" to pragmatism.

The method to be followed in this examination of contemporary philosophical problems is indicated by the characteristic intimate connection between philosophy and science already noted as the original physiognomy of modern philosophy. Each chapter of this book is devoted to a special problem, and is at the same time concerned with a fundamental science, or rather with the value of the particular science, the objective knowledge it can give us. Chapters II., III., IV., V., VI., VII. are concerned, respectively, with the problem of number and extension (the quantitative properties of matter), the problem of matter, the problem of life, the problem of mind, the moral problem, the problem of knowledge and of truth. The fundamental query throughout these discussions presents itself as follows: Is knowledge merely a consequence of practical activity, and is truth to be identified with that which succeeds? or is success a result of science because knowledge is of real relations? While it is the primary aim of the author to give an unbiased outline of the existing condition of the discussion as manifested in the general problem of each science, he briefly indicates his own conclusion upon the subject in favor of the scientific or positivistic point of view as against the teaching of pragmatism. He affirms that the knowledge to be obtained by means of scientific method is satisfactory to his own requirements, but admits that there may be other needs for other natures.

We shall mention briefly some conclusions in the successive chapters. Mathematics, originating in experience, gives us knowledge of certain groups of real relations (order, number, extension). These once obtained, the scientist may proceed to manipulate them in an arbitrary manner, but the results of such manipulation apply to experience because of their foundation in original real elements. The author remarks that pragmatists have been frequently mistaken in claiming the teachings of scientists to be evidence of the theory of pragmatism. For example, Poincaré, instead of being a pragmatist, is too little of a pragmatist, since he does not require that arbitrary creation must refer back to experience if it is to be valid.

The problem of matter is one of experimental inquiry. Physics gives us knowledge of a more complex set of relations than those of mathematics.

The physicochemical theory of life gains ground every day and points to the conclusion that life is an *ensemble* of relations more rich and complex than those of matter and attached to the mechanical and physicochemical relations.

In the imperfect state of psychological science, the burden of attainment appears to promise conclusions the same as in the other domains of knowledge. Psychological science will consist "in establishing not only necessary relations between the different manifestations of psychological life, but also between these and certain manifestations of the biological life and certain actions of the environment." Pragmatism has rendered an important service in putting mind in nature.

Morality has nothing in common with theoretic speculation. It is an art, and must utilize the science concerned with the manners of men.

With respect to the problem of truth, there appear to be indications of the following solution: Relations, not terms, are given first in knowledge. Experience shows us the transformation of condition to conditioned. Science is not true because it succeeds, but succeeds because it is true.

In Chapter VII. the author presents the general conclusion as to the nature of philosophy. Science and philosophy differ not in object nor in method, but in point of view, the philosophical point of view being distinguished by being more general. It is the province of philosophy to coordinate the results of the sciences and to originate the general hypotheses for the sciences as a whole.

The style of the book is clear and concise, and the whole is interesting reading. One feels that the endeavor at impartial statement of positions has, on the whole, been accomplished. The discussions of the philosophic positions of the various sciences are illuminating. In the opinion of the reviewer the sketch of the theory of pragmatism appears to be mainly influenced by the movement of thought in France, although important reference is made to William James and the Anglo-American movement. This may account for the extreme emphasis upon the philosophic activity of the scientists. Thus some arguments cited as adverse to the contentions of pragmatism seem to be in harmony with recent technical discus-

sions of the subject. However, the omission of such material may have been necessitated by the summary and synthetic character of the study.

SAVILLA ALICE ELKUS.

NEW YORK CITY.

Elementary Experiments in Psychology. CARL E. SEASHORE. Henry Holt & Co. 1908. Pp. xi + 218.

The difficulty of developing an experimental attitude toward mental processes and of securing an adequate acquaintance with the spirit and methods of the experimental investigation of mental phenomena is presumably encountered by most teachers of large introductory classes in psychology. In the absence of a satisfactory manual of elementary experiments to accompany the text-book and lectures, students rarely get a first-hand acquaintance with mental processes and a real appreciation of methods of studying them. The result is that, while they may all learn much about psychology, they do not form the habit of psychologizing. A few may get the psychological attitude, but it is safe to say that the majority do not. Such class demonstrations as are practicable give crude results and are unsatisfactory. They may amuse and interest, but they are not particularly instructive. The time, labor, and expense involved in giving a large class actual laboratory practise, even with a well-equipped laboratory, makes this method of introduction to modern psychology impracticable.

For these reasons, to which every teacher will no doubt agree, there is a definite need for such a manual as Professor Seashore's "Elementary Experiments in Psychology." It is a valuable addition to the handbooks in psychology, and ought to be warmly welcomed in every quarter. The purpose of the book, as set forth in the author's preface, is "to meet the requirements for a series of experiments in the first course in psychology. It makes individual experiments, as opposed to class demonstrations, practicable, regardless of laboratory facilities or the size of the class. The student is given means and encouragement for pursuing each problem intensively in order that he may acquire independence of thought and action, realize the actuality of mental processes, and get here and there a vision of the vastness, the orderliness, the practical significance, and the charms of mental life."

This purpose of the book is admirably fulfilled. Great pedagogical skill and ingenuity are shown in the planning of simple experiments, which, if properly carried out, are sure to train the student in habits of introspection, to give him a knowledge of psychology as an experimental science and to arouse an interest in the solution of its problems. The experiments are well selected, can easily be made by one student alone or by two working together, except the experiment on reaction-time; they require very little apparatus, or such as can be readily obtained, and yet are adequate to illustrate psychological principles and give insight into methods of their study. The directions to the student are clear, concise, and unambiguous, and the brief discussions of the experiments are stimulating and suggestive.

The manual, moreover, covers a sufficiently wide range of topics to give the student familiarity with the problems and methods in the main lines of experimental investigation. The first three chapters treat of visual sensations—after-images, contrast, and the visual field. The fourth chapter gives the well-known experiments in visual space perception—entoptic phenomena, the retinal image, accommodation, double images, and stereoscopic vision. The fifth chapter gives a rather elaborate series of experiments in auditory space. The experiments on the visual field and on auditory localization strike the reviewer as being relatively too complex and difficult and to require greater ability in introspection than is likely to be found in the average student. The chapters which follow give well-chosen experiments in tactual space, cutaneous sensations, Weber's law, mental images, association, memory, apperception, attention, normal optical illusions, affective tone, and reaction-time. In the reaction-time experiments the chain-reaction method is of necessity adopted. This may do very well for a rough demonstration of simple reaction-time, but it is doubtful if it is even worth while to attempt to analyze out by its means the times of discrimination, choice, cognition, restricted association, free association, and judgment.

Professor Seashore's book is certain to be widely used, especially by the growing number of teachers who believe that an adequate introductory course in psychology can not be given without some actual experimental work. It will be of value to those students who do not pursue the subject beyond a first course, and will serve for those who do as a valuable introduction to laboratory work. Moreover, it should promote an intelligent interest in the study of psychological problems.

V. A. C. Henmon.

University of Colorado.

JOURNALS AND NEW BOOKS

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. October, 1908, Band XV, Heft 1. *Über das Problem der Freiheit auf Grund von Kants Kategorienlehre* (pp. 1–27): J. Stilling. – Conscience, our sense of freedom, and the categorical imperative are naturalistic in origin, developments under social conditions. *Aristoteles Urteile über die pythagoreische Lehre* (pp. 28–48): O. Gilbert. – Plato's "Philebus" shows the relation of the Pythagorean doctrines of odd and even, infinite and finite, to Aristotle's concepts, matter and form. *Die Geschichte des Symbolbegriffs in der Philosophie* (pp. 49–79): M. Schlesinger. – In the philosophy of ancient Greece symbolism was rather an attractive, poetic garb than a necessity of exposition. *Ästhetische und teleologische Geschichtspunkte in der antiken Physik* (pp. 80–113): A. E. Haas. – The esthetic preference for circular motion, and for the distinction between celestial and mundane laws, retarded physics; at the same time all ancient sciences gained much from esthetic interest, and from the teleological

theories which it occasioned. *La théorie des incorporels dans l'ancien stoïcisme* (pp. 114–125): E. Bréhier. – For the stoic, events, qualities, and laws were the incorporeal and the unreal, that which is said or affirmed of the real, the sensible, the corporeal. *Bericht über die Philosophie der europäischen Völker im Mittelalter 1897–1907* (pp. 126–139): C. Baeumker. – Unfavorable criticism upon F. Uberweg's "Grundriss der Geschichte der Philosophie der patristischen und scholastischen Zeit," 1905 edition. *Die neueste Erscheinungen. Historische Abhandlungen in den Zeitschriften. Eingegangene Bücher.*

Chamberlain, Arthur Henry. *Standards in Education: With Some Consideration of their Relation to Industrial Training.* New York: The American Book Co. 1908. Pp. 265. $1.00.

Cutten, George Barton. *The Psychological Phenomena of Christianity.* New York: Charles Scribner's Sons. 1908. Pp. xviii + 497. $2.50 *net.*

Driesch, Hans. *The Science and Philosophy of the Organism.* The Gifford Lectures delivered before the University of Aberdeen in the year 1908. Vol. II. London: Adam & Charles Black. 1908. Pp. xvi + 381. $3.00 *net.*

Sidis, Boris. *An Experimental Study of Sleep.* From the Physiological Laboratory of the Harvard Medical School and from Sidis's Laboratory. Boston: Richard G. Badger. 1909. Pp. 106.

NOTES AND NEWS

The following account by Professor Edouard Perrier, of the Museum d'Histoire Naturelle, of portions of a skeleton recently discovered in southern France in strata of the middle Pleistocene period is of exceptional interest: "The skull is that of a man of extremely low type, an ape-man, or perhaps of a man-ape of greater cranial capacity than any at present known. This great cerebral development leads M. Perrier to consider it, on the whole, a human skull. But the very thick, low cranial dome, the flattened forehead and pronounced orbital ridges, the broad nose separated from the forehead by a deep furrow, and the much elongated snout-like maxillaries combine to give the skull a marked gorilla-like seeming. The brain cavity, however, is, as already said, very much larger than that of the gorilla or any other present-day anthropoid. The limb bones are curved and present a conformation which indicates that this Pleistocene man walked more often on all-fours than in an erect position. The bones seem to be fairly intermediate between those of a man and those of the present-day anthropoids. Altogether Professor Perrier (whose scientific standing gives his opinions in the matter high authority) believes that he has in his hands—the specimens have been purchased by the museum—remains much more ancient than those of Neanderthal or Spy, and actually representing a type intermediate between Pithecanthropus and present man."

At the recent meeting of the Southern Society for Philosophy and Psychology, held at the Johns Hopkins University, December 30–31, 1908, the following officers were elected for 1909: President, Professor Lefevre, of the University of Virginia; Vice-president, Dr. Franz, of the Government Hospital for the Insane; Secretary-treasurer, Professor Buchner, of the Johns Hopkins University. To serve three years as members of the Council: Professor Messenger, of the Virginia State Normal School, and Professor Ogden, of the University of Tennessee. Other members of the Council are Dr. Harris, of Washington, D. C., President Purinton, of the West Virginia University, Professor Baldwin, of the Johns Hopkins University, and Principal Halleck, of Louisville, Ky.

Professor Hugo Münsterberg has returned to Harvard University from a trip to Chicago, Toronto, and Ithaca. He spoke in Chicago before the Chicago Club on "Psychotherapy," before the Germanic Society on "Books and Readers in Germany and America," and before the Commercial Club on "Psychology in Commerce and Industry." In Toronto he addressed the Canadian Club on "Right and Wrong in the Prohibition Movement." At Cornell University he spoke on "New Developments in the Psychological Laboratory" and "Psychology and Law."

Professor Haeckel will resign his chair at the end of the winter semester in order to devote himself to his phylogenetic museum. As his successors at Jena, the faculty has proposed Professor Lang, of Zurich, Professor Kückenthal, of Breslau, or Professor Platte, of Berlin. It is said that Professor Platte will be selected by the administration.

The Clarendon Press is publishing in two volumes the papers read before the recent Congress for the History of Religions, held at Oxford. From the same press comes a low-priced reprint of Jowett's translation of Plato's "Republic." The volume contains the translator's introduction and the analysis which appears in the third edition.

The Society for Philosophical Inquiry held a meeting at the George Washington University on Tuesday afternoon, January 12. The topic for discussion was "Music and its Relation to the other Arts and to General Culture." Professor George L. Raymond was speaker for the afternoon.

Williams and Norgate are publishing a translation of the latest work of Professor Rudolf Eucken, who received recently the Nobel Prize for literature. The translation is entitled "The Life of the Spirit."

Professor G. S. Brett, formerly of the Government College at Lahore, India, has been appointed lecturer in classical philosophy at Trinity College, Toronto.

The date for the unveiling of the monument to Lamarck, in Paris, has been postponed until next May. It will occur just before the Darwin celebration.

A reproduction of the first edition of the "Critique of Pure Reason," published by Hartknoch at Riga, in 1781, is announced.

Mr. Asa Gifford, of Yale University, has been appointed instructor in philosophy at Bryn Mawr College.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

AN OUTLINE OF COSMIC HUMANISM

IN a former paper in this JOURNAL[1] the writer outlined an hypothesis of absolute experience, suggesting here and there a philosophy of "cosmic humanism" which, if worked out, might redeem American philosophy from its present level of brute pragmatism and unromantic realism. If only the master pragmatists would suppress their endless essays in defense and definition of their method! All but the most stiff-necked and unregenerate of the younger English-writing philosophers have long ago adopted the pragmatic method, but now stand amazed and dismayed to find their masters indulging themselves in the sin of elaboration and analysis. This abuse of the "method of definition" is the natural vice of rationalism. It were better that the pragmatists applied their energies to cultivating the world-ground which they have already wrested from their hereditary foes.

The world-ground lies fallow, awaiting the hand and will of an expert. Meanwhile it may be well to offer, as a stimulant and irritant, an outline of the world-view which in his former paper the writer described as "cosmic humanism."

I

The pragmatist has on his hands a world-ground. What shall he make out of it? There is a certain pusillanimity in the present attitude of pragmatism. The Promethean boldness of rationalism's world-views may well have staggered the gods. But now their divine amazement is tempered with heavenly mirth by the spectacle of a *will*-philosophy which yet does not dare to press beyond the limits of tedious definition and timid, "on-the-whole" hypotheses. The history of earlier pragmatisms with their *homo mensura* sophisms makes it certain that, unless pragmatism produces a man who shall measure the very cosmos by himself, the movement begun so potently and promisingly a few years ago will prove as evanescent as a passing breeze. The pragmatist theory has never yet been genuinely tested.

[1] Vol. IV., pp. 176–183. The present paper was read before the American Philosophical Association at its recent meeting in Baltimore, December 29–31, 1908.

Such a test would require that the, so far, rather sterile pragmatic philosophy were incubated for a while in the self-same cosmic matrix wherein the seeds of rationalism have hitherto germinated and flourished. What sort of world-view is the pragmatic passion likely to breed if it thus germinates and produces its kind on a cosmic scale?

Its offspring must be in some sense a *world*-view. In this matter the pragmatist must recognize the validity and persistency of the human spirit's search for something universal and eternal. Such a search has indubitably had its functional value in the growing experience of the race, and must, therefore, by the pragmatic test be recognized as helping to constitute the living truth. What, then, is this perfect passion for universals and eternals? Has it the validity of a world-forming, world-creating principle? Is it *merely* a passion? Perhaps the passion itself is the one universal thing in the world? Does it connect, or disconnect, the human from the cosmic? Is it the whimpering and wailing of a soul in an incurable agony of finiteness? Or is it the terrific will force of an *Übermensch* claiming his birthright as an aristocrat of the universal life? It may well be that a painstaking critique of this old-fashioned passion for the eternal and universal will expose impulses out of which pragmatism itself may organize a view of the world covering in principle the whole ground of reality.

It is certain that, whatever the eternal is, it is not of the nature of *ideas*. The prime fallacy of rationalism arises from its failure to distinguish between the *function* and the *content* of an eternal impulse. The region in which the self acknowledges a universal *a priori* quality in its processes is, as the literature of speculative mysticism attests, a region of transempirical consciousness. Wherever the mystic experience has divulged a content of ideas, these can be shown to be preconceptions subconsciously stored away in the mystic's past experience. The pure function of consciousness in this transempirical region has the imperative, eternal, universal quality just because it has no empirical content. It is a pure function; its uncertain content, the irreducible contradiction between ideas and will, has always been regarded by the first-class pessimist as an unmitigated evil.

It can not be affirmed that this pure function is inwardly diversified into fourteen forms of experience, more or less. Here, again, the evidence of speculative mysticism must be trusted. The persistent characteristic of the pure mystic experience is its spacelessness, timelessness, causelessness. For some years the writer has experimented in this mystic region, but has been unable to identify in the experience, *e. g.*, of time, as infinite, any quality that distinguishes it from space, as infinite. The experience in both cases is

one of perfect *fluency* without ideational content. The infinite as well as the infinitesimal space-experience begins to "swim" or "shiver" as consciousness verges upon the abysmal. These are the habitual expressions by which my subjects have sought to symbolize the perfect fluency of the universal and eternal quality in the experience of space and time.

And this which is true of the infinitudes of the pure reason is equally true of the infinitudes of the practical. Who can uncover, say, in wisdom, as infinite, a quality that isolates it from goodness, as infinite? In the wisdom literature from Plato to Emerson these terms of practical infinitude are constantly interchanged and interfused. The eternal goodness is in all points wise: the universal wisdom is in all directions good. In the mystic experience neither goodness nor wisdom has any ideational content.

The first principle of cosmic humanism confronts us here. Whatever may be in detail the defects of the world-view herein outlined, this first principle I hold to be indefeasible: "infinite" when attached to any substantive whatsoever is the sign of a contentless, formless *function* of experience. A self-organism, whether human or cosmic, is fundamentally finite on the side of its empirical content. There is no such *thing* in man or cosmos as an infinite *idea.*

The writer's former thesis in cosmic humanism is, therefore, not guilty of begging the question between pragmatism and rationalism in affirming that there must be even in a world-experience a region of absolute subconsciousness the infinity of which is purely functional. We may grant, with philosophers like Leibnitz and Hartmann, the hypothesis of an unending, unconscious fecundity in the world-ground. The cosmic life may be in an incomparable degree teeming with germinating ideas and wills. We are driven, nevertheless, by the most fundamental structure of our own organisms of experience to presuppose a formless function underlying all these countless half-conscious impulses, ideas, and passions of the world-ground.

In its first principle cosmic humanism is thus aligned with speculative mysticism rather than with rationalism. It acknowledges in the world-ground an "infinite tendency" rather than a well-ordered and self-representative structure of eternal and universal ideas.

II

In its second principle this cosmic application of the pragmatic method must transfer to the world-ground another ingrained feature of the human organism of experience; namely, the instinctive coordination of blind impulses into a consistent organism of vital experience. The pure function of consciousness does, in fact, take on a

living content; the unconscious does become conscious; the simple fluency of primal consciousness does become dirempted by warring wills and ideas. The prenatal bareness of animal experience does fructify with the passing years. The cosmic function has evolved a cosmos with the passing ages. Now, is this a fructification into consciousness of unconscious *idea* or of unconscious *will?*

Here, again, the bias of rationalism must yield under the test of experience. This test has already shown us that the inmost structure of consciousness excludes the notion of a divine mind full of an infinite number of infinite ideas and forms. But rationalism might justly intervene at this point with the sentimental contention with which throughout its history it has gripped the race of men. Putting aside all metaphysical claims with respect to the ideas of the eternal and universal, this pure sentiment of rationality simply claims that at any rate the motives of the cosmic life are always ideational rather than impulsive, calm rather than passionate. The sole aim of world-experience is to arrive at an eventual, inner harmony of its germinating ideas, to subject all wills to this ideal of consistency and smoothness of being. In a word, the prime aim of experience is to become *reasonable.*

If this final defense of rationalism is an argument for the *primacy* of ideas as against impulses, its argument can not claim the support of experience. On the contrary, nothing is more certain than the primacy of the impulsive phase of consciousness. The consciousness of single-celled animals is fundamentally motor; likewise the prenatal consciousness of the higher animals. In these two cases no idea whatever (except, perhaps, sensations of pressure and warmth) can be present in the organism's inner experience; and yet the very signs are motor by which the psychologists infer that they are conscious at all. Or, again, in idiocy and senile dementia, where consciousness approaches once more its primal state, the last functions that linger above the threshold are not ideational, but motor. In "absolute" idiocy there still remains a vegetating activity; in dementia the first functions to disappear or become confused are ideational, and in the last stages an impulsive activity continues long after it becomes only too painfully apparent that all control from ideational centers has ceased.

With scrupulous regard for the structure of known organisms of experience, cosmic humanism is thus able to take a second step in its construction of world-experience. It now conceives that experience to be an infinite, totally subconscious function whose first steps in world-experience are impulsive rather than ideational. No matter how persistently a world-soul may in its present constitution be aiming at inward reasonableness, in its beginning it had no *idea* where or

how its activity was coming out. Like every other organism of experience, it just became, it just grew! In this matter cosmic experience is again comparable with the mystic passion which desires an infinite number of things, and yet has no *idea* what these things are. *The cosmic passion may be eternal, the cosmic idea is inherently temporal.*

III

These initial impulses arising blindly within the formless and fluent infinity of world-consciousness have undergone coordinating, organizing, and hardening processes. In the present state of the cosmos the average observer will be very reluctant to accept any doctrine of the present plasticity of cosmic stuff. In this matter of plasticity the materialist now has the weight of evidence in his pan of the scales. The patent fact is that, except within very narrow limits indeed, things are not plastic under our processes of practical reaction. By overdoing its hypothesis of the perfect plasticity of the world-ground, humanism might easily fall into the pathetic fallacy of absolute idealism. On the clear ground of known experience the humanist may insist (*a*) that the cosmos conceived as world-experience must be inwardly a pure function, and (*b*) that in its *initial* processes of growth it was an inchoate matrix of perfectly plastic yet blind impulses-to-be. But it can not be urged on the same ground that world-experience in its present state is thus blindly and perfectly fluent. World-impulses, whatever they may be in their inward, primeval character, are now outwardly fixed and hardened.

Does, then, the structure of cosmic humanism fall to pieces because one can not by taking thought pinch off a cubit of world-stuff and plaster it on his own head, nor by praying make the sun stop in its course? There is a certain merit in the criticism of one of pragmatism's doughty opponents who declares that the theory is designed solely for the man who needs to get out of a scrape. But the apparent bathos of pragmatism at this point arises solely from a failure to fit the structure of human experience *fully* into the cosmic scheme. For it is true of human experience, not only that it has this inner and initial plasticity, but also that in its adult form it has stiffened and hardened into all sorts of physical fixtures. In our own organisms there exist innumerable physical processes which are only subconsciously felt and are ordinarily wholly uncontrolled from higher centers. In both its phylogenetic and ontogenetic origin this human experience began, we may fairly suppose, as a plastic feeling-consciousness of the total organism: the plastic simplicity of the consciousness of the single-celled animal and of the freshly impregnated fetus is paralleled in each case by the plasticity and simplicity of the

organism itself. But with the inward formation of physical systems each discharging a fixed function in the evolving organism there proceeded likewise, on the side of consciousness, a certain subconscious hardening of physical consciousness; *e. g.*, feelings of visceral massiveness, of joint and muscle strains, of physical weight, hardness, and the like.

Humanism, disabused of any metaphysical hypothesis of cosmic plasticity, should propose at this point an hypothesis of cosmic, physical subconsciousness. In brief, two postulates are involved in the fundamental structure of physical experience. (1) The physical universe has originated not by the fully conscious control of some eternal intelligence, but, rather, through a hardening into objective being of the unconscious, organic needs of the impulsively evolving cosmos. (2) The physical universe is now felt in the cosmic life as so much pull and strain and dead weight.[2] In a word, plasticity is no more a characteristic of cosmic than of human experience.

IV

On the other hand, the humanist metaphysic need not postulate a cosmic experience *less* plastic than the human. As we have just seen, the physical parts of an organism are *felt*. They are not inwardly and radically sundered from the region of conscious being; they are subconscious, but not unconscious. Moreover, within certain limits physical processes are subject to control from the higher motor centers of the organism. Consciously controlled heart-beating, accelerated or depressed circulation of the blood, voluntary bisecting of the viscera, the suggestive therapeutic reduction of inflammation in diseased parts, the psychic treatment of nervous and chronic diseases —these are cases in point. The evidence by no means proves the complete plasticity of the human organism under conscious control from higher centers; it does indicate, however, that there is in the conscious organism no inherent *inability* which would prevent the controlling of physical processes from volitional centers of the cosmic life.

V

The foregoing conclusions expose the marrow of the divinity within the dry bones of scholasticism. The genius of the schoolman is revealed and exhausted by his search for a necessarily permanent

[2] I need hardly say that this transcription of physical subconsciousness from the human to the cosmic scale should not be carried to an anthropomorphic extreme. In the cosmic life there are, of course, no visceral feelings, no muscle and joint strains, and all that. At the most the cosmic physique feels in a universal degree the intracortical strains and the brain fatigue which assail the human life.

principle underlying and pervading the shifting sands of being. And this is the lasting passion of all seekers after the universal and eternal.

That such a principle is discoverable we have seen. It is in reality not a system of fixed and well-ordered concepts, but a pressure of conscious activity presupposed in all our processes of experience and felt even in the region of our subconscious, organic life. But the very process of analysis which discovers this active principle of all experience does not wholly satisfy the scholastic passion for an eternal whose existence is *necessary. It is conceivable that the function of consciousness even on a cosmic scale should cease to be active.* There are cases of known organisms wherein the active, organizing principle has practically ceased to work. In absolute idiocy and coma the organism of experience seems to be slipping back into the abyss of totally unconscious non-being. Either because of a congenital poverty of impulses-to-be, or through a fatiguing of these impulses, conscious activity seems about played out. If, now, we apply the norm of human to cosmic experience, we may admit the possibility of defectiveness and fatigue even in the cosmic organism. The persistency of the physical universe in the midst of its ceaseless flux of being must thus be interpreted partly as the natural healthiness of a great cosmic animal[3] and partly as the conscious resistance of cosmic energy to the deranging forces of mental disease.[4] The real existence of universal principles or laws is, therefore, to be regarded not as necessary, but rather as the achievement of a partly conscious and partly subconscious will-to-be in the cosmic life.

VI

It remains only to ward off a possible misunderstanding of the foregoing analysis of the world's absolutely subconscious matrix by explaining that this discussion of the "infinite" has no explicit reference to the *tender* infinitudes of religious experience. To affirm that the absolutely subconscious has in itself a *blind* character which, as blind and unconscious, is strictly submoral, or to consider that this subconscious world-life has arrived at and is now consciously working out in its voluntary centers a *personal character,* or to submit the ground on which religious experience may justify its antagonism to positivism in claiming that this personal character is cosmic and not

[3] A large part of the living truth is undoubtedly expressed in the cosmic *animism* of Greek culture. See Plato's description of the world-soul as a "perfect animal," "Timæus," 31. *Cf.* Aristotle: "Deity is an animal that is everlasting and most excellent in nature. . . . This constitutes the very essence of God," "Metaphysics," Book XI., 6.

[4] Such resistance appears to fail, as we have seen, on the human plane in cases of idiocy and senile dementia and on the stellar plane in cases of "dying" comets.

merely human—these questions the writer hopes to discuss at some future time in a paper dealing with "The Cosmic Character."

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REVIEWS AND ABSTRACTS OF LITERATURE

The Psychology of Feeling and Attention. EDWARD BRADFORD TITCHENER. New York: The Macmillan Co. 1908. Pp. 404.

Psychologists of feeling have as a rule started at the big end of the horn. Titchener proposes to reverse this procedure, and to take his departure from elements themselves. All fundamental differences in psychological systems depend upon the different conceptions of sensation, feeling, and attention. A knowledge of the issues here involved and of the relevant facts becomes imperative. The problem of sensation, though it is the farthest advanced of the three, is an involved one. The unsettled state of feeling and attention is notorious. Temperament and training have largely determined the attitudes thus far taken toward these problems. Titchener claims, however, to "keep as closely as possible to documents and to experimental results."

As sensation must be for the author the standard of reference throughout his discussion, he attacks at once this preliminary problem. Two usages of the word must be distinguished. "The sensation for psychology is any sense-process that can not be further analyzed by introspection." "The sensations of psychophysics, on the other hand, are the sense-correlates of the elementary excitatory processes posited by a theory of vision or of audition, etc." The sensory element of psychology, with which the author is concerned, must be defined in terms of its attributes. The provisional definition of attribute may be that it is any aspect of sensation which fulfils the conditions of inseparability and independent variability. Independent variability is within limits only a reliable test of an attribute. Following Müller, Titchener groups attributes of sensations into those of qualitative and those of intensive character. In the intensity group come such sensation characteristics as intensity proper (degree), duration, extension, and clearness. Qualitatively a sensation may possess a "complex of distinguishable qualitative attributes," or a single one. A sensation of color may (without approaching or withdrawing from the zero point) be varied in hue, tint, and chroma, three distinguishable attributes in the quality group. Likewise volume and pitch in the quality of the tone sensation are distinguishable, each one being at the same time qualitative. In pressure sensations, also, there is overlapping of the ticklish, the quivering, and the granular qualities. This overlapping is found as well in pain and certain kinesthetic sensations, and, possibly, in alimentary sensations. Titchener concludes here that "psychology has taken the simplicity of the qualitative attribute in too dogmatic a spirit," showing very forcibly "that there is a great deal of

work still to be done before we can make out a final list of the sense qualities."

As to the intensity problem decision is likewise difficult, instances of the independent intensity variation being hard to find. In the sphere of vision Hering, Hillebrand, and Külpe have each denied its existence. Concomitant quality variation confuses introspection. Titchener thinks, however, that psychophysics has explained and resolved the difficulty of the spatial and temporal attributes. Controversy is active for the reason that we confuse time estimate and durational experience, space estimate and extensional experience. The charge of equating the psychical and the physical has been met in the case of intensity and can here be dismissed. Empirically "duration appears to attach to all sensations," and extension to visual and the three cutaneous senses. The fourth intensive attribute, reflecting as it does the distribution of attention, is very fully dealt with later in the discussion. There are also, yet to receive adequate investigation, attributes of a "higher order," which may or may not be further analyzed, such as the penetratingness of certain scents, or the urgency of pains, or the obtrusiveness of certain colors. In estimating the number of possible sensations Titchener raises the question as to why quality has been accepted as the "individualizing" attribute of sensation. If intensity should also be an individualizing attribute the number of visual sensations would be unaltered, although the auditory list would be greatly lengthened. The same problem arises with the other attributes, and Titchener suggests that their differences, like intensive differences, should be regarded as ultimate and distinctive. Yet he sees no necessity here for logical strictness. A classification should be adopted for the sake of expediency. Such problems of this introductory chapter are presented to put the reader "in tune" with the author in his later study of the still more baffling questions relating to feeling and attention.

Some psychologists have held that there is no independent feeling element, some that there is. The James-Lange theory dispenses with this independent element by identifying affective processes and organic sensations; Stumpf, by divorcing sense-feeling from emotion; both differing from Titchener, who believes that simple feelings "represent a stage or level from which we ascend to the emotions," and *vice versa*. Hence for the author the only thoroughgoing procedure is to attack the problem at the bottom, by examining the criteria of sense-feeling, or affection.

Subjective is the term which is supposed to differentiate feeling from sensation, and those using it have tended to confuse epistemological and psychological inquiries. Wundt, however, uses subjective in the sense of "tendency to fusion." This characteristic is not, however, attributable to a single element, and likewise it does not satisfactorily differentiate feeling and organic sensation. Another meaning for subjective is that it refers to the uniqueness of the experience, while objective, characterizing the sensational element, refers to the common experience by different observers of the external stimulation. The phenomena of adaptation show sensation to be in a similar case, and hence "variability of affective judgment may be due, precisely, to difference in affective adaptation."

Feelings, again, are called subjective because they can't stand alone in consciousness: sensations objective because they can. Some sensations are subjective, however, and some feelings objective, if we are to admit introspective records. Hence objective and subjective are poor names with which to distinguish elementary sensation and feeling.

Affections, again, are said to be *unlocalizable,* while sensations can be localized. As to "*outer* localization," feelings are often localized, some sensations never. The question of "*inner* localization" brings up the question of mixed feelings. Can affections coexist, as sensations do, in consciousness? Here Külpe and Wundt are arrayed against Ebbinghaus and Sully. Titchener apparently thinks he finds experimental support here for the impossibility of the coexistence of feelings. This feeling criterion is at least in doubt; the evidence, though strong, is not conclusive.

Sensations, again, merely differ, *feelings are antagonistic.* Sensation differences, expressed in paired terms, cold-hot for example, do not in themselves imply real opposition, and opposition does seem to require the presence of feeling. Still "affective opposition" is meaningless unless we understand by it "mutual incompatibility in consciousness," a concession to an unproved, though likely, assumption, in Titchener's mind.

A fourth suggested criterion is that, *while sensation is stronger than image, image-affection is intensively equivalent to the sense affection.* As this involves the mooted problem of affective recall, Titchener cites Ladd as counter-authority, and points out the need of "experimental control of affection," mentioning the objection that this rests on two doubtful assumptions; that sensation and image differ only in intensity, and that the image-affection (?) may not have passed in each case into sense-feeling.

Again it has been said that *habituation* marks off feeling from sensation. The direct analogue is here, however, obvious. Lastly, affections are said to lack the *attribute of clearness.* This, authorities to the contrary, Titchener thinks the most firmly grounded criterion of affection. Thus the conclusion seems to be that it is necessary to discard the criteria of habituation and central intensity, to pronounce doubtful those of subjectivity and non-localizableness, and to attach some importance to the qualitative antagonism and to the lack of the clearness attribute. Here, as indeed throughout the volume, Titchener succeeds admirably in forcing the appeal to experience, and to experience, moreover, under experimental conditions.

Ruling out from consideration numerous historical and epistemological attempts to reduce affection to sensation, the discussion now centers upon Stumpf's 1906 paper, "Ueber Gefühlsempfindungen." Stumpf clearly dismisses the possibility of conceiving feeling as an attribute of sensation, since it itself possesses attributes. Titchener agrees, thinking this an error that dies hard. As to another alternative, that feeling is an independent element, Stumpf throws the burden of proof on the adherents to this view. Unless the difference between sensation and feeling is primary and fundamental, conceptual hypotheses of their independent existence

violate scientific economy. Stumpf, then, is concerned in showing that affection is best and most truly conceived, not as attribute, nor as coordinate element, nor yet as a special kind of sensation, as vision for example; but rather as a (central ?) concomitant sensation. By an appeal to the different senses Stumpf concludes that pain is a sensation and that pain-quality is a quality of sensation. To this Titchener assents, dissenting, however, both as to the nature of this pain-quality and as to whether unpleasantness is really a qualitative character of the pain itself. Stumpf here has overlooked the significance attached to the pain sensations that are still pleasant. Again, for Stumpf itch is a pleasant sensation, for Titchener it is an itch sensation with a pleasurable (or not) concomitant affection. In short, Titchener thinks that the Stumpf theory would have to mean (p. 95) that "pleasures of touch or temperature, sight or sound, aroused by intensive peripheral stimulation, depend for their pleasurableness upon the coexcitation of the organs of tickling, itch, lust, etc." So again, in the problem of agreeableness and disagreeableness of stimulation of visual, auditory, taste, or smell organs, Stumpf's theory does not satisfy introspection. Its author would say that, physiologically, it is possible that agreeableness excitation is never set up independently of visual or auditory, etc., or that agreeableness and color are intimately fused, or that agreeableness sensations are of central origin. In this last case, of course, they can never be isolated by modifying peripheral stimulation. Here Titchener thinks Stumpf unwarranted in bolstering up his theory by purely psychophysical arguments. The possibility of "isolating the pleasure organs" of vision, etc., obviously is not taken seriously by Titchener. Stumpf's conclusions rest upon the assumption that something that can be separate in idea, but not separately sensed, is still a sensation. Concerning here the related problem of the separateness of imaged affection and of sensory image, Titchener, aside from his own convictions about affective imagery, finds "no atom of reliable evidence" of the fact. Even so, Stumpf would answer, the affective element might still be an "accessory sensation of central origin."

In brief, Stumpf has not been consistent in his attempt at a descriptive task; he has examined the three alternative affection criteria and found them wanting; he has established pain and itch, for example, as sensational in character (taking for granted, however, that they and their analogues are thus affective concomitant sensations); he has surmounted the difficulties in sight, sound, taste, and smell by a retreat into psychophysics; in short he has posited the psychophysical possibility of centrally excited accessory sensations, thus lending his name to a proposed substitute for the "affective element" theory of Titchener and others. Here the critic can see in the substitute no possible applications which would seem to justify the rejection of the independent element hypothesis; this, too, after examining those proposed.

Titchener next devotes a whole chapter to a consideration of Wundt's tridimensional theory of feeling. He sees germs of this theory in the early writings of Wundt and attempts to account for that author's apparently shifting attitudes toward the problem. He then outlines the

finished theory and numbers the five general arguments used by Wundt in its defense. This is in substance a résumé of the published controversy between these authors, already familiar to psychologists. Briefly, Titchener thinks Wundt's reliance upon results of the impression method irrelevant, his support for the three dimensions based on temporal relations of affective experience (given up by Wundt himself) useless, and the argument based on the general conditions of conscious contents, intensive, qualitative, and temporal (disregarding without reason the spatial), as "logically defective and psychologically indefensible." There remains, however, the necessity for testing the soundness of Wundt's introspective evidence, and the validity of his analogy from the qualitative analysis of the emotions.

In the first place, Titchener is impressed with the significance attached to the fact that Wundt repeatedly changes the terminology for his maximal dimensional opposites. The real difficulty evident is one of reconciling the apparent conflict of the demands of accurate introspection and of the necessity of maintaining this assumed typical affective movement between opposites. Titchener's real introspective difficulty in assenting to Wundt's classification is shown by other psychologists, even by those who are themselves, as Royce and Vogt, disposed to some dimensional theory. The multitude of elementary qualities which these dimensions are supposed to include involve one, of course, in still more intricate and perplexing problems. As compared with the richness of Wundt's, Titchener finds his own introspection of these compound feelings very meager. He feels strongly that Wundt confuses organic sense material with feelings, and that the lack of interest of the latter in organic sensations *per se* accounts for the apparent richness of affective qualities. In short, the organic sensations are responsible for the tridimensional theory. Experimental investigations by Titchener and Hayes are here reported as "experimental evidence" to the contrary, though it is not claimed that they are conclusive. On the whole Wundt's theory is valuable chiefly in that it is a starting-point for further inquiries. As yet Titchener offers no hint at any constructive theory. So fascinating and necessary first is this clean critical preparatory survey.

Before we are to have his own tentative psychology of feeling, attention (the clearness attitude of sensation) must be treated. Experimental psychology may justly point with pride to three principal and distinct achievements: the recasting of the doctrine of memory and association, a scientific treatment of individual differences, and, despite vague hints throughout the whole history of psychology, the discovery of attention by an explicit formulation of the problem—"the nerve of the whole psychological system." As the name of Helmholtz must be associated with the doctrine of sensible quality, and that of Fechner with sensible intensity, so must that of Wundt be with the doctrine of attention. Despite this fact, even recent writers, Ebbinghaus and Pillsbury for example, by "constant appeal to casual introspection," really confess scientific weakness. Many have too readily acquiesced in Kant's doctrine, that introspection (really retrospection) of psychology can never be identical in import with

the introspection of physical science. Titchener concludes that there is no difference here in principle, illustrating his point, and concluding that, in the case of the disappearance of affective processes, this is due to another fact, the "incompatibility of affection and attention." The really adverse influences in the study of attention have been due to "the pressure of popular psychology and the obviousness of application." Scientific psychology has, however, fought clear of the popular fallacy of regarding attention as a faculty. Again, the demand for immediately applicable formulæ "has discouraged that work of scattered exploration by which alone a science is enabled to advance."

Titchener proceeds to show how the real problem of attention centers in the fact of sensible clearness, and that it can best be studied by conceiving it as an intensive attribute of sensation. He has prepared for this discussion by his introductory treatment of sensation. Baldwin's Dictionary cites five types of attentional theory. These are representative, and Titchener makes the point from them that "wherever you look, you find some form of reference to clearness; clearness is, so to say, the first thing that men lay their hands on, when they begin to speak of attention."

It remains to consider under what conditions sensation appears with maximal clearness. These are (1) intensity of stimulus (including duration or extensity considered as equivalents of high degree of sensible intensity); (2) quality (some qualities intrinsically clearer than others); (3) temporal relations of stimulus (suddenness, pretty well assured; repetition as such still requiring experimental proof); (4) movement of stimulus (especially in the fields of vision and touch); (5) novelty (a true condition in its own right in so far as it means non-associatedness); (6) the associative relationship between the sensation and the whole circle of momentarily dominant ideas (in complex sensory or in acquired ideational interests); (7) the accommodation of organs of sense (as a negative condition at least, if we admit in addition to "attributes of stimulus" "psychophysical dispositions"); and (8) the absence or cessation of the stimulus (a true condition only when foregone attention is presupposed). Thus, just as the central fact of attention is clearness, so all "empirical conditions of conscious clearness may be grouped together as conditions of a powerful impression of the nervous system" (p. 204). Titchener does not go into elaborate discussion of theory. Intensive stimuli set up psychophysical processes of relatively great strength, qualitative make appeal to peculiar nervous susceptibility, repeated stimuli with cumulative strength rank with the intensive, sudden stimuli impinge upon nervous elements of a high degree of susceptibility, moving stimuli arouse different nervous elements in quick succession, in a sense also being cumulative, novel stimuli do not have to share their effects with associates or rivals, and the anticipatory image makes the correlation of a given excitation coincide with a psychophysical one already in progress. Likewise, of course, excitations in the line of a "psychophysical disposition" will have greatest effect, whereas "peripheral accommodation" opens the gateway to the cortex, giving the stim-

ulus strength from the first. Finally, it is a matter of little consequence to recast all these empirical conditions into those physiological and those psychological. The sole condition is nervous disposition. Genetic psychology may classify these determinants in the order of time, experimental psychology delimit and quantify their influence, and physiology exhibit the mechanism of their nervous operation.

Thus attention, clearness, is conditioned upon nervous predisposition, exactly as the attribute, quality, is conditioned upon nervous differentiation. To be an attribute of sensation implies that it varies, within limits, independently of other concurrent attributes. This is the first law of attention. Some qualities admit of a very narrow range of clearness-degree. The intensity-relation to clearness is the debatable ground, however. Here Titchener, citing flatly opposed authorities, is again driven to experimental results. From these he positively concludes that, with strong as well as with weak stimuli, attention has an intensifying effect. He can not explain what this means physiologically or psychologically. Attention in a measure thus is seen to be an independently variable attribute, while at the same time it seems bound up with intensity. Weak sounds may be as clear as loud ones, but weak clear sounds may not be as weak as they would be at a lower degree of intensity. From the foregoing it is natural, from physiological conditions, that intensity and clearness should be intimately related.

The law of the two levels is Titchener's second law of attention. Baldwin and Angell (who follows him) have confused physiological and psychological clearness, in positing four levels in consciousness. Ward's three grades include "subconscious presentations" as one level. Marshall seems to find by introspection a "feel" of a narrower or fuller aura in the lower field of inattention. Helmholtz, Leibnitz, and Wundt find kinds and degrees of clearness—clear and obscure grades. Morgan discusses the focus and the margin. Titchener can not verify the distinctions purported to have been found by Baldwin, Angell, and Marshall. The question of the relative degrees of clearness in the two levels is found to be a difficult one. Titchener, while admitting the possibility, can not discover these in the lower level. He takes issue with Wundt's introspective interpretation of a clear, a half-obscure, and a wholly obscure (merely a feeling of "something there") field, the first two in his opinion belonging to the upper, the last to the lower level. If clearness be taken as a sensible attribute of sensation, and introspection here be clearly distinguished from the conjoined assimilative function of cognition, it will be found that, so far as clearness (attention) is concerned, the clear and the half-obscure belong both to the upper level. These are recoverable in the "image of reproduction." Likewise James, in his "Stream of Thought," interested in the cognitive function, is primarily concerned with the upper conscious level. This actual two-level formation of consciousness is narrower above, broader below. This assured difference of clearness of focal fields is a promising field for experiment, however doubtful the case may be with the lower level.

The third law of the temporal relations of attention, the so-called laws

of accommodation and of inertia, is a law of the total attentive consciousness rather than of clearness itself, and hence not pertinent in an elementary psychology of attention. It relates to problems of perception and of idea. For Titchener throughout a simplified psychology of elementary attention is the desideratum.

Following up, then, Titchener's clean-cut inquiry into the "carrying power of clearness under simple conditions," we are given the law of prior entry, which permanently displaces former absurdly proposed explanations of the negative displacement of the bell-stroke, in complication experiments, by showing it to be a phenomenon due to definite predisposition of the attention, of "prior entry." As to the law of limited range, Titchener, against Ebbinghaus, agrees tentatively with the more common account that many stimuli may become clear in consciousness at the same time, at least until this consensus has been subjected to experimental revision.

Concerning the law of temporal instability, Wundt has confused the term instability with discontinuity in his claim for the latter. Titchener questions discontinuity "even in extreme instances of successive association." The quality attribute is not "intrinsically intermittent," though the quality may fade out. Experiment must decide here also as to whether clearness is intermittent. The question becomes this, Does fluctuation occur in all sense departments? In touch attention shows no fluctuation sometimes for several minutes, in one instance for over ten minutes. This, in the sphere of touch, with no accommodation organ, suggests that conditions for fluctuation are peripheral. Evidence is next forthcoming that the same holds good of hearing, and that fluctuations in sight are due to "very special conditions residing in the function of the peripheral organ." At least a safe tentative position is that until peripheral conditions are investigated further appeal to the cortex is useless. Peripheral conditions of clearness are intermittent, the oscillation of the central predisposition is an open question. Titchener is not concerned, of course, with the fluctuations of the total attentive consciousness. The law of temporal instability holds for central predispositions.

A final law of attention, illustrative of Titchener's attempt "to disentangle the really elementary problems from the problems of the total attentive consciousness," is that of degree of clearness, some law of clearness comparable to Weber's law for intensity. This has not been discovered, no way of measuring attention directly or indirectly having proved satisfactory. Suggestions, however, as to methods for objective tests which might indicate gross differences in attentional degree and capacity in different observers, or constancy and fluctuation in the same observer, are given. All experimental investigations where introspection is judiciously got and interpreted, and even results from expression instruments, might be utilized in the needful work of differentiating conscious degrees of clearness.

Titchener has been constructive in his treatment of attention, but as yet only critical in his feeling discussions. His final chapter is constructive here also, although modestly offered as "tentative and provi-

sional." He deprecates the intellectualism typical of Herbart, the sensationalism of contemporary physiology, the strong intellectual-bias inheritance of experimental psychology, and the inertia of settled philosophical tradition. He welcomes the revival, from the eighteenth century, of revolt from intellectualism and of interest in affective processes. Physiological tradition has been broken. Experimental study can now clear the air. Affection must be given elemental rank. It lacks the attribute of clearness, it "moves between opposites," there is with sensations a concurrence of these distinguishing characters, and finally the genetic difference between sensation and affection can very likely be made out. Let us, then, dismiss the unproductive affective memory hypothesis, and, contrary to Stumpf, work with feeling in its own right. What theory, then, will round out the above elemental considerations? Assume that consciousness is ultimately homogeneous. Assume that affections appear as "undeveloped sensations, that might, under favorable conditions, have developed into sensations." Assume further that peripheral organs are necessary for affections. (This last is Titchener's implicit assumption.) Hazard a guess that these organs are the "free afferent nerve-endings, distributed in the various tissues of the body, which represent a lower level of development than our special receptive organs." With Mach he says, "Had mental development been carried farther, pleasantness and unpleasantness might have become sensations," differentiated each into a larger number of sensations. This theory would explain the absence of the attribute of clearness. By this arrested development they can never attain to clear consciousness.. "Affective experience is the obscure, indiscriminable correlate of a medley of widely diffused excitatory processes" (p. 292). This theory will also explain the "movement between opposites" by these processes reporting, as good or bad, the "tone" of the bodily systems from which they proceed. Mixed feelings are thus accounted for (dismissed ?). The lack of qualitative differentiation would thus be explainable, as would the introspective resemblance between organic sensations and affections. Genetically they are akin. Titchener's apologetic conclusion here is that "where our positive knowledge is practically *nil,* there is no disgrace in being wrong."

The relation of attention to affection can be anticipated. Titchener can scarcely take Ebbinghaus seriously in the latter's contention that the affective value of impressions is one of the conditions for attention, relegating such vagary to the "popular psychologies." In the second question of systematic importance he finds himself in agreement; namely, in the possibility of attending without feeling, finding that instances of "feelingless attention" are "of fairly common occurrence." The connection, obvious and natural, need not be universal. The term "will" covers both the facts of attention and the facts of action, those of action being simply cases of attention. Of course, we act without feeling. As of action, we may have automatic, instinctive, or mechanized attention. The relation between affection and attention so far is merely external, may be only so. Affection reports the tone of the "organless" part of the bodily system, "attention clarifies the sensory contents under

the influence of powerful nervous stimuli." Naturally (assuming the correctness of Titchener's theory of feeling) the special organs become adapted to these attentional stimuli,—"so that, while the corresponding sensations appear, at least momentarily, at the conscious focus, there is no felt shock or tilt of the whole living body, no concomitant pleasantness or unpleasantness. We may attend without feeling." This, for Titchener, is a welcome "loosening up" of systematic psychology. Can the opposite occur, can feeling with its organic tone, its undeveloped "peripheral organ" functioning, be present while the sensory contents are still obscure? Wundt thinks this possible. Titchener thinks Wundt confuses feelings and organic sensations, he himself concluding that the relation between affection and attention is in this sense intrinsic. Strong feeling implies relatively clear sensible factors.

The expectation and effort which are supposed to accompany attention are not necessarily affective. The problem of effort leads to the important question of the motor interpretation of attention and to the distinction of attentive states as voluntary and involuntary. Titchener thinks that a motor explanation can not adequately explain all the facts. It is an exaggeration to define attention entirely in motor terms. In many cases cited no motor outflow can be found. As neither strain sensations nor feelings aid in distinguishing forms of attention, Titchener offers his primary passive, active, and secondary passive forms as a useful genetic classification which does not slur observed differences.

The discussion ends with a graceful apology which will tend possibly to silence the hostile critic and to stimulate sympathetic ones (and there very likely will be many) who can not pursue the subject along the interesting and various lines suggested by the author.

It is amusing to speculate upon how many unwary readers may be caught by the ambiguous title of "The Elementary Psychology of Feeling and Attention." It is "elementary" in somewhat the sense that McDougall's "Primer" is, another innocent looking little book. The reader will soon discover himself, however, grappling in Titchener's discussion with fundamental and baffling conceptions. His task is clean-cut, even without the constant references to "systematic psychology" and the sharp slaps at "popular psychologies," at ready-remedy applications, at cortex speculations, at the questors for results who use shaky methods (among whom the writer is classed), at those who simply adopt epistemological or teleological attitudes in psychological inquiries, and even at those who confuse psychophysical with psychological conditions and conceptions. The beauty of it all is that one is thrown back upon his haunches at every step. He must introspect for himself, either to agree or to disagree; and if conditions are not right for this, he has created in him the desire for recourse to reliably recorded introspections. The exceptional value of Titchener's own self-recorded introspections, given with assurance and under desirable conditions, will be recognized by all psychologists who are interested in the special problems under discussion. The rich number of urgent experimental problems, together with the large citation of introspections from authorities who are flatly opposed,

produces in the reader a rather healthy bewilderment, which should serve mightily to stimulate definite investigation. And, in that the book is an avowed attempt at a contribution to a systematic psychology from elements, one wishes that Titchener had at least made explicit in some connection his attitude toward certain very definite and pointed considerations recently formulated by Woodworth in the James commemorative volume and by Calkins in her recent articles in this JOURNAL—a demand for a recasting which may make necessary the recognition of elemental disparate constituents of consciousness other than those from which Titchener takes his starting-point. Though it is true that he seems to follow where his facts lead, still the writer has the feeling that there are other and at least equally compelling considerations which have not been allowed due weight.

Another noticeable feature of the book is the evident desire of the author to give Wundt due historical prominence, ascribing to him certainly his full share (all that even a father of science could desire) of priority in most affairs of moment in the development of "systematic psychology." The importance of this for the historian of psychology can not be questioned, if the verdict itself is not too generous.

As to the new theory of feeling proposed by Titchener, although its actual formulation fills scarcely three pages, I think the author's whole exposition and outlook depend for their provisional acceptance entirely upon this general explanation, and upon the possibilities of its adaptability to the varied phenomena observable. I seem to find a suggestion that it would in the main be acceptable to Cattell in his article in the James commemorative volume (pp. 580 ff.). However, though quite ready to plead guilty, with many others, to the charge of "cortex speculation" with scarce hope for any verification at an early date, I do not see that Titchener's shifting the speculation to some possible peripheral apparatus should be taken any more seriously than Stumpf's no less reckless attempt at "isolating the pleasure organs" of vision for example, which may accompany the sensory color excitation. Stumpf is avowedly sensationalistic in so far as introspection (or identical terminology) goes; Titchener is too, I think, dangerously near the same position. Titchener assumes, of course, that any feeling must be either pleasant or unpleasant. This dimension, if no other, holds always. He further assumes that all psychologists admit this much. I do not understand Binet, C. Minnemann, nor Royce to admit this; as I have before insisted,[1] Royce also believes Wundt to mean that feelings of any one of the dimensions can exist in the absence of the other dimensions, citing examples from his own introspection. The rough, popular, teleological, non-introspective, pleasant-unpleasant differentiation and opposition is the one useful for ordinary daily life, of course. It suits Titchener's theory of feeling evidently because feeling is conceived as a sort of vague, unspecialized, undeveloped consciousness. Without the vividness attribute for feeling in its own right, this conclusion is natural and, I suppose, inevitable. With clearness as merely an aspect of intensity, and, moreover, with no clearness

[1] See, for example, Royce's "Outlines of Psychology," pp. 176 ff.

but this sort of sensible intensity clearness, what some understand by a peculiar distinctness (degree of affective clearness) is ruled out. Feelings *per se* can never develop. On this view it is hard to see how they can ever be fully analyzed by introspection. I am disposed to believe that, just as Titchener has discovered something radically wrong in the principles of introspection of those whose interpretations and views diverge from his own, so there is something inadequate in his own principles of introspection.

He makes much of the so-called introspective resemblance between organic sensations and feelings (p. 293). I do not believe there is any more intrinsic resemblance here than with any other kind of sensation. Wundt's affective dimension of restlessness (excitement), or Royce's, as the latter has clearly pointed out, may indeed always have as a companion process concomitant sensory experience of movements, for example, "but the feeling of that value of our experience which makes it an object of momentary discontent"[2] is a feeling bearing introspectively no resemblance to sensory factors. It is true that Titchener charges Wundt and all dimensionalists with this very error of confusing organic sensations and affections, but I think it is equally true that he has not exhausted introspective possibilities by assuming that our discovery of organic sensations will reduce the richness of feeling characteristics. The very beginning assumption or hypothesis, that from an evolutionary standpoint sensations were probably first differentiated, seems to deserve grave questioning. Tawney and Davies, at any rate (and many others), have in different ways given some reason for doubting the fruitfulness, and the intelligibility even, of such a supposition. It is plausible on Titchener's physiological theory, however.

This leads us to what seems to me the crux of the whole matter, so far as adverse criticism goes. Titchener deprecates and combats sensationalism and intellectualism. Does not Titchener himself in reality offer an intellectualistic account of conscious life? "It is a healthy instinct that sends us back and back again to the channels of sense, as we seek an appreciation of the fulness and richness of the mental life." Peripheral "channels of sense" seem to me to mean avenues for sense material; and it seems just as likely, more so, if there are elements of consciousness intrinsically different from sensations, that the concomitant functioning organs might differ too. So far as I am able to see it, the same criticism Titchener directs against Stumpf may possibly be turned against himself. So far as the "healthy instinct" goes, it would seem that just as many turn back and back again also to some concomitant nervous activity which may account for or correspond with the actual introspective difference between feeling and sensation. Titchener's express desire to look for peripheral counterparts for feelings displays a disposition to class feelings with organic sensations in a more intimate way, as intrinsically more like sensations, than Stumpf's method of merely naming them sensations. The latter by centrality of reference seems to me to suggest somewhat more introspective distinction between

[2] Royce, "Outlines," p. 178.

feelings and sensations than the former, and to come nearer helping us out of the difficulty mentioned above in the quotation from Royce. Titchener would rule the teleological principle out of affective psychology altogether, and I suppose almost everybody would agree with him. The danger is to slip easily, with the help of some new formulation, back into the intellectualistic attitude. It remains that the use of the teleological principle had nothing to do with those dark ages in the psychology of feeling at the impossibility of whose return Titchener rejoices.

As to his doctrine of mixed feelings I can not agree, not only because I do not, frankly, desire to, but because my own work on feeling, and the introspections there gathered from many subjects, I can not gainsay. Method may be more valuable than results at the present stage of our knowledge (or ignorance), but methods will avail more than method, and I believe that an elemental psychology upon which a more comprehensive systematic psychology may be built will some day be framed on somewhat different lines from any that yet exist. This will begin with a fundamental reconstruction of the conception of psychic elements. The interesting theory above reported is not (all others that I know fall in the same category) free from certain implications which seem to me to violate every introspection and every ideal I depend upon. Titchener's discussion of the clearness attribute is, of course, pivotal. The problems he seeks to explain by his theory as formulated arise from this position. Münsterberg's discussion of the independent vividness attribute should have been dismissed somehow for his puzzled readers. If feeling and attention are not "incompatible" Titchener's position is weakened on both counts, and his groundwork calls for a recasting. Other problems not mentioned by him replace some of those he stresses. The impossibility of attention to feeling is too readily assumed. This is the only way we shall ever learn about either organic sensations or feelings. Subjects have rarely been given extended training in feeling introspection. None of the introspective data upon which Titchener relies is got from subjects specifically trained for long periods of time with excitations arousing presumably elemental feelings. He dismisses, without warrant I think, certain empirical considerations which were emphasized in my own investigations, one of these being the possibility of training in feeling introspection, and another the independently variable vividness of feelings. A fuller discussion of these and other points, however, I reserve for separate consideration. If the condition for clearness is "a powerful impression of the nervous system" it seems highly improbable that feelings may have no such occasion to function. I may be blind to the possibilities, the implied and possible ramifications which can be worked out and adapted to the explanations of common experience, but I seem instinctively disinclined to work with an hypothesis which seems to rest upon the presupposition that feeling itself can not be developed and refined. Judd has seemed to me to deprive feeling of content, to empty it of significance in its own right. Titchener disagrees with Judd, but I don't know just how. On his theory I can't see just what distinctive function feeling (an example of arrested mental development) may have in life. "Had

our physical development been carried farther, we might have had (instead of our vague affective life) a corresponding increase in the number of internal sense organs" (p. 292). Despite my inability to describe what the attitude is which may be free from intellectualistic and also from teleological shortsightedness, and despite my effort to accept Titchener's tentative hypothesis, I do not feel entirely without misgivings under his flag. To be reasonable, one should offer a substitute. This would imply a treatise. This I do not presume to attempt. I have, however, honestly, even if inadequately, tried to suggest my personal reaction to the work as a whole. I suppose some of my objections may be ruled out as "epistemological." But somehow it seems to me that our epistemological presuppositions inevitably underlie and exercise some directive influence upon our characteristic attitude toward psychological problems, especially those of feeling. Moreover I can not understand exactly how we can safely divorce such considerations when we lay our elaborate groundwork for a "systematic psychology." At any rate this divorcing, in the opinion of the writer, has not been done by James, or Münsterberg, or Judd, or Titchener, etc., and when one tries to make articulate in what fundamental respects he differs from another, for temperamental or other reasons, he finds himself at their starting-point. I am myself unable to find an attitude yet worked out which seems to me sufficiently free from sensationalism and intellectualism to allow for a treatment of feeling which satisfies my own introspection. Titchener has made undoubtedly an important contribution, and the very sort that was needed. Professor Titchener ranks so high, and merits it all so clearly, that his modest and undogmatic, even at times apologetic, attitude so abashes one that it is doubly difficult for the writer, who is even in name scarcely yet a psychologist, to raise a dissenting voice.

After all Titchener has eminently succeeded in what he set out to do, stimulate systematic investigation, state critical problems, lend his name to an original theory, and offer a wealth of concrete material and well-stated considerations which can never be neglected by any future psychologist of feeling.

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The Philosophy of Loyalty. JOSIAH ROYCE. New York: The Macmillan Co. 1908. Pp. xii + 409.

Readers of "The World and the Individual" have been awaiting with eagerness the appearance of a work which should supplement the author's metaphysics by the presentation of his ethical creed, as held by him to-day. The "Philosophy of Loyalty," in which this hope seems about to be realized, will, however, prove in some respects disappointing to the special student. For it is, as expressly announced in the preface, neither a text-book nor "an elaborately technical philosophical research," but rather a popular discussion of a single problem, which took its final form

in a course of lectures delivered before the Lowell Institute. Nevertheless, the problem chosen is so fundamental and is treated with so much clearness that the essential features of the author's theory of ethics appear in unmistakable outlines, even though the reasons offered for its acceptance are not elaborated with anything approaching completeness.

The subject-matter of the book is, broadly speaking, the content of the moral ideal. This for Professor Royce, as for Hegel, consists in the identification of the individual will with the universal will. This universal is, of course, the organic whole of which each individual mind is a member. The creation of a harmony between myself and the world, in other words the setting before myself of ends the realization of which is at the same time the realization of the ends of my fellowmen, this is the task that the moral ideal lays upon me. Such a prescription means, negatively, indifference to all satisfactions that are merely individual, except as they may be incidental to the attainment of the ultimate end; with this will disappear all strife except that against the enemies of the ideal itself. Positively it means the giving up of one's life to the service —not of individuals as such, for there is no reason why I should supply others with what I do not allow myself, but of causes. For a cause is a tie binding a number of individuals into a unity through their struggle for or possession of a common object. What particular causes you and I are to work for must be determined mainly by our tastes, our abilities, and our circumstances. But whatever our cause may be, evidently we must so choose and serve it as to increase to the utmost of our power the amount of devotion to causes in the world. For only as society becomes thoroughly permeated by such a spirit can it become completely unified. If, by narrowing somewhat the common signification of a word, we agree to call "the willing, practical, and thoroughgoing devotion of a person to a cause" loyalty, then it follows from the preceding that all virtue is loyalty of some sort, and the supreme virtue is loyalty to loyalty.

The evidence offered for the truth of this position is twofold. In the first place, it is maintained that this unity of the one and the many is the highest good of the individual himself, that, indeed, nothing is a good except as it is supported and made what it is by this consciousness of harmony. Whence by the convenient and (among philosophers) popular assumption that the right is always and everywhere identical with the agent's highest good, the equation, morality = loyalty, is obtained. In the second place, it is asserted that the ordinarily accepted virtues, as veracity, respect for property, and the rest, find their explanation and justification in terms of this conception.

But may not the conception itself rest upon a myth? Devotion to a cause may, indeed, be the individual's highest good, but he can find it such, as Professor Royce admits, or rather insists, only on condition that he supposes the cause to be worthy of his devotion. Now a cause, as we have seen, does not derive its ultimate value from the satisfaction its realization will afford to individuals. Is worth, or value, to be defined, then, in terms of something other than satisfaction? By no means; the good must represent the satisfaction of some conscious being. If, then,

morality be not the worship of a fetish, the cause must be a super-personal being, an experience dwelling upon some higher level of consciousness than any human being ever reaches. And the cause of causes, the unity of the life of the race, can be nothing other than God. At this level of insight morality passes over into religion, and loyalty may be defined as "the will to manifest, so far as is possible, the Eternal, that is, the conscious and superhuman unity of life, in the form of the acts of an individual Self." The evidence for the existence of this super-personal consciousness occupies the two closing chapters of the book. In the seventh it is presented by means of a polemic against pragmatism, in the eighth by a more purely constructive argument. As these add nothing essentially new to the exposition in "The World and the Individual" and in the presidential address, "The Eternal and the Practical," they need not detain us here.

Such are the outlines of this simple and impressive picture of the moral life. What, now, are we to say of the grounds upon which it is recommended for our acceptance? In attempting to estimate their adequacy we are confronted by the fact that the book is not a treatise, but a series of popular lectures. Now, if a lecturer wishes a second invitation to address the same audience, even if it be an average "academic" audience, he must supply entertainment or edification, not evidence. If, then, the present reviewer finds himself compelled to say that (ignoring the metaphysical discussion as something already before the philosophical public) the arguments of the earlier chapters seem to him not merely unconvincing, but flimsy, he is not so much condemning this book as giving the author a hint as to how to deal with the difficulties of at least one reader when he comes to prepare a more thoroughgoing presentation.

Professor Royce, as we have seen, reaches his conclusion by two different paths, through a doctrine of the good and a doctrine of the right. The position that loyalty, as above defined, is the supreme good, by the side of which all other objects of desire are (as I understand it) worthless, is attained primarily by the author's favorite method of eliminating alternatives. The most important alternative attacked is hedonism. But his argument, if valid, will hold equally against a number of closely related theories such as Alexander's and Simmel's, which, for want of a better name, may be called voluntarism. Now the essence of both hedonism and voluntarism is catholicity and freedom. As far as the individual's own good is concerned, they assert that the satisfaction of no desire is as such worthless, and, provided that a harmony of desires has been attained which is both comprehensive and stable, the individual's own judgment as to the relative position of his different desires is not to be condemned on any pretext, except as the interests of other persons are involved. The representatives of this position will accordingly maintain that he who picks out a single object of desire and holds it up as *allein-seligmachend,* must give definite and rigorously tested evidences to justify his contention. Unfortunately, this is precisely what we do not find. "Unless you can find some sort of loyalty," we are told, "you can not

find unity and peace in your active living." The second of these two statements gets what measure of truth it possesses—not from the author's ethical, but from his metaphysical, position, according to which the universe is perfect. For the devotee of a lost cause, if he really believes it lost forever, will gain no peace from his devotion. The similar claim with regard to unity stands as a mere bold assertion. Unity with others in the pursuit of a common end undoubtedly enhances the value of that end for most of us. For some persons it is possible that no other kind of pursuit is capable of issuing in satisfaction. Such enhancement of value can as easily find a place in the hedonistic or voluntaristic account of the good as anywhere else. What is required, however, for Professor Royce's purposes, is a demonstration that it must occupy precisely the same place in every life; and, secondly, that everything else is worthless for every one. The very beginnings of such a demonstration are lacking.

With regard to the argument that all the commonly recognized virtues can be stated in terms of loyalty, it must be pointed out that all the virtues indispensable for the conservation of existence can be justified by any theory whatever which, in Nietzsche's phrase, affirms life. The real test comes when we apply our theory to the actions which aim at something more than the protection of the conditions of existence. No attempt is made to meet this test. Furthermore, since the theory claims to describe the moral life of common sense and not merely that of the philosopher, it assumes that the judgments of common sense never regard as moral the seeking for purely individual goods (whether for self or for another), and, further, that common sense looks upon the success of a cause as having a value independent of the good that may accrue to the individuals thereby affected. For the first of these assumptions no evidence whatever is offered. For the support of the second I suppose the author has in mind the peculiar enthusiasm which a cause is capable of evoking. Doubtless a million is a more impressive figure than one. But a million is, after all, made up of units, and whatever the source of its power over the imagination, it is in any event not a product mysteriously generated by the fusion of zeros.

If, in conclusion, we turn to another aspect of Professor Royce's work, the pedagogical and homiletic, I believe all readers will agree in pronouncing it a masterpiece. The method of approach and the order and manner of treatment exhibit great skill. The style is transparently clear. Every sentence pulsates with life. And the whole glows with a warmth that can be infused only by a profound and generous nature that has seen a noble vision.

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JOURNALS AND NEW BOOKS

RIVISTA FILOSOFICA. September–October, 1908. *Il concetto della storia della filosofia* (pp. 421–464): G. GENTILE. – Philosophy expresses the problems and deeper needs of the society in which it arises. Thus philosophy must not be isolated from history, but history is man's progress towards freedom, and all progress towards freedom is progress in philosophy. The history of philosophy involves the history of humanity. History demands metaphysical and teleological interpretation. *La base anatomica dell' intuizione* (pp. 465–496): E. LUGARO. – Intuition is a representative function and dependent upon representative centers operating at a level below internal or external stimuli. *Un trattato elementare di filosofia indiana* (pp. 497–513): L. SUALI. – Continues the description of contents of the "TarRâmrita of Jagadîça" begun in a previous number. *Il concetto della natura ed il principio del diritto* (pp. 514–524): E. DI CARLO. – A discussion, with approval, of Del Vecchio's recent book bearing the title of the article, and an effort to clarify the author's deduction of the principle of right from his fundamental ethical principle, *viz.*, the absolute anatomy of the subject or person. *La riforma della scuola media* (pp. 525–542): P. F. NICOLI. – A discussion, with approval, of "Riforma della scuola media," by Salvemini and Galletti (Palermo, 1908). Education in Italy suffers from the attempt to maintain a monopoly for classical studies, and from methods of mere memorizing. *Terzo congresso filosofico internazionale* (pp. 543–553): G. VIDARI. – Of particular interest were the papers of Royce, Croce and Boutroux. Noticeable was the penetration of philosophical interest into the stricter departments of science; a general opposition to pragmatism, not, however, to reject it so much as to modify and correct it; and the increasing importance of the contributions from countries other than Germany, namely, England and America on the one hand, and France and Italy on the other. *Rassegna bibliografica:* Opere di: F. Masci–A. Falchi (pp. 554–560). *Attraverso le riviste italiane. Discussioni. Notizie e pubblicazioni. Sommari delle riviste straniere. Libri ricevuti* (pp. 561–578).

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Schinz, Albert. *Anti-pragmatisme.* Examen des droits respectifs de l'aristocratie intellectuelle et de la démocratie sociale. Paris: Félix Alcan. 1909. Pp. 309. 5 fr.

Spranger, Eduard. *Wilhelm von Humboldt und die Humanitätsidee.* Berlin: Reuther und Reichard. 1908. Pp. x + 506.

Vidari, Giovanni. *L'individualismo nelle dottrine morali del secolo XIX.* Milan: Hoepli. 1909. Pp. xx + 400.

NOTES AND NEWS

Miss C. B. Dubois has published a monograph in the third bulletin of Volume VIII. of the ethnological publications of the University of California, dealing with Luiseño Indians of South California. The following is from a summary in *Nature* (January 7) of Miss Dubois's article: "Though they have been exposed to European influence for more than a hundred years, and have lived for nearly two generations under rigid Christian discipline, it is remarkable that so many of their pagan beliefs and customs have survived. It is still more noteworthy that, about a hundred and twenty years ago, a pagan missionary movement extended from them to the Diegueño tribe, among whom the new cult which centers round the personality of Chungichnish was introduced. This new faith, like others which have extended beyond their original home, had every requisite of a conquering religion—a distinct and difficult rule of life demanding obedience, fasting, and self-sacrifice —and it enforced its commands by an appeal to the fear of punishment, a threat that avengers in the shape of stinging weeds, the rattle-snake, and the bear would punish neglect of its observances. The most important of the rites connected with the Chungichnish cultus is that of Toloache, or the initiation of youths and girls. In the case of the former, the candidates, in a state of nudity, are dosed with a decoction of the jimson-weed (*Datura meteloides*), which contains a powerful narcotic and excitative principle. After the intoxication produced by this drug has passed away, the secret dances of the tribe are performed and the mystic songs are sung. The Shaman who conducts the proceedings asserts that he is possessed of magical powers, and the initiates are instructed to imitate his feats. During the dance the performers appear to speak in the tongues of beasts and birds, a rite possibly connected with a belief in personal totem animals or guardian spirits, which up to quite recent times survived among this people. These rites are followed by a fast from salt and meat sometimes lasting two or three weeks, and meanwhile the youth is instructed in the tribal code of etiquette and morals. He is told, for instance, that no one should eat immediately on rising lest the spirit which was absent from his body in sleep should be unable to return. On the same principle, on return from an expedition into the hills he must defer eating so as to permit the wandering spirit to rejoin its mortal body. This initiation rite is accompanied by an elaborate symbolism, of which Wanuwat, or the sacred net, and a form of painting or modelling in sand are the most prominent features. The net is said to symbolize the Milky Way, a prominent feature in the night sky of that region, which is regarded as the home of the dead; and the main idea seems to be based upon an attempt to free the departing spirits from this earth, and to prevent their return by binding them in the net of the Milky Way. The sand painting may perhaps best be described as a cosmological model in which the tribal conception of the relation of this world to the heavens is portrayed. The annual commemorative rite for the dead is performed over images repre-

senting the departed, a custom common to the Hindus and other savage or semi-savage races. Singing and dancing, with whirling of the bull-roarer, precede the burning of the images, in some cases the clothing and ornaments being consumed, in others removed by the friends. Like the rite of the sacred net, the intention seems to be to expel the spirits of the dead from the neighborhood of the living. The creation legends of the tribe, now for the first time fully recorded by Miss Dubois, are of considerable importance, and must be taken into account by all students of comparative mythology. In the beginning existed only Kivish Atakvish, the Void, who was followed by Whaikut Piwkut, 'the whitish gray,' who created two great round balls, which were male and female. The union of sky and earth then produced the first people, now represented by the magic mortar, wampum strings, the mast used in the death rites, and other sacred objects, animal and vegetable. Then appears a deified hero, Oniot, who is done to death by Wahawut, the witch, and, as in the Hindu Yama saga, death thus entered the world. Besides these is a group of interesting sky myths."

THE following abstract of the paper on "Some Implications of Recognition," read by Dr. G. F. Goldsbrough before the Aristotelian Society on January 4, is from the *Athenæum:* "The subject was suggested by recent papers on the subject of mental activity, and by the publication of an empirical view of mind recommended for adoption by medical men in preference to a metaphysical treatment of the subject. Dr. Goldsbrough adopted the conclusion of Mr. Carr, who, following Hume, passed the judgment upon idealism that, from the point of view of idealism, a final or philosophical judgment on mental activity was impossible. After the judgment of impossibility, immediately a person began again to think on the subject, he was obliged to take the chance whether a philosophical judgment would be found possible or not. On recognizing the reappearance of other persons who had engaged in the pursuit of philosophy in the past, a predication of mental activity in other persons as objects became possible by the subject. This experience constituted the true foundation for the predication of mental activity. Two persons in union in this experience proved to each other that mental activity was no illusion. Through subsequent experience they could predicate that their experience of mutual reappearance and recognition had been an experience of union; and the immediately subsequent experience which appeared to enable them to do this was mutual pressure of one on the other. Pressure was realized as *between* the two persons, but the experience of *between* only confirmed the predication of the previous experience of union, and when, subsequently to the initial experience of union, which inferentially through pressure had ceased, the predication of the previous reality of union had only been confirmed. The experience of union could thus be predicated to consist in freedom from pressure, or rest. Union and rest thus became the foundations of the judgment of possibility for future philosophical judgment. In order, however, to render judgment on mental activity from these persons accessible to others further steps were necessary. The first of these steps was concerned with the problem of identity, which for

the purpose of judgment might be confined to formal identity. When through the analysis of experience an agreement on formal identity was reached, the passage to philosophical judgment became relatively easy. Not, however, through two persons only. There was the connection of past and present to be considered, and to be expressed through formal identity. For this purpose another person in union with the previous two was called for, who, through formal identity, could predicate knowledge of the past of the one who was passive object to the other's mental activity. The experience of three persons of this nature constituted the experience of communion, upon which all future philosophical judgment must be based."

ACCORDING to the *Nation*, "The Hague Society for the Defense of Christianity asks for competitive discussions of the following themes: (1) An Investigation of the Value of the Empirical Psychology of Religion for the Doctrines of Christianity; (2) A Scientific Discussion of Ethics on the Basis of Modern Religious Principles. The prize for the former is to be bestowed on December 15, 1909, and for the latter on the same day, 1910. The prizes are four hundred gulden and a gold medal. Scholars of all nations may compete."

DR. DAVID STARR JORDAN, president of Stanford University, has been elected president of the American Association for the Advancement of Science for the meeting to be held next year in Boston. Dr. William H. Holmes, of the Bureau of American Ethnology, is vice-president of Section H, Anthropology and Psychology; Professor James E. Russell, of Teachers College, Columbia University, is vice-president of section L, Education.

THE address given by Professor H. Poincaré before the Mathematical Congress at Rome, on the subject of "The Future of Mathematics," is published in the *Revue générale des sciences* for December 15, 1908. M. Poincaré begins by discussing the purposes of the pure mathematician and his relationship to the engineer.

THE MACMILLAN COMPANY will bring out at an early date "Totemism and Exogamy," by Dr. J. G. Frazer. The volume will include a reprint of the author's "Totemism," long out of print, a "Geographical Survey of Totemism," four articles published originally in *The Fortnightly*, and a summary with conclusions.

PROFESSOR EDWARD B. TITCHENER, of Cornell University, will give at the University of Illinois a series of lectures in psychology, probably during the latter part of March.

A MONUMENT to Professor von Krafft-Ebing was unveiled in the hall of the University of Vienna at the time of the recent international congress in that city on the care of the insane.

PROFESSOR C. V. TOWER, of the University of Vermont, has gone abroad for graduate study and travel.

SHELLEY'S translation of the "Banquet of Plato" has been republished by Houghton, Mifflin & Co.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

MOTOR PROCESSES AND CONSCIOUSNESS[1]

IN view of the many different attempts which have been made to explain the relation between motor processes and consciousness, one can hardly be surprised if his own statements on this matter do not command universal acceptance. The problem is one which a large number of writers agree in regarding as the most important special problem in psychology at the present time, but the solutions differ widely. Perhaps the best way to meet one's critics under such circumstances is to turn critic oneself and examine the other views in the field and by such a comparative study exhibit the virtues, if there be any, of the position to which one is himself committed.

Among the first writers to emphasize the importance of motor processes as general conditions of consciousness were Dewey[2] and McDougall.[3] Dewey makes the statement that consciousness is conditioned by the action of the whole nervous arc, and not by any single section or part of the arc. Consciousness does not, therefore, depend merely upon sensory impulses; it is determined in character by the motor end of the process as well as by its sensory beginning. McDougall finds in new motor processes the chief conditions for the rise of consciousness. It is only when the individual is working out a readjustment in active response that consciousness arises.

These two general theories are both suggestive, but leave, even if they are accepted, all the details to be worked out by later investigation. We can not be satisfied with so broad a statement of the general relationship if the principle is to serve as a guide to concrete empiricism. To say with McDougall that new motor processes are the conditions of all consciousness leaves us with the necessity of showing how certain particular phases of consciousness are related to particular types of motor process. Suppose we say, for example, that the adjustments of the eyes in the visual per-

[1] Earlier papers in this series were published in Vol. V., p. 676, and Vol. VI., p. 36, of this JOURNAL.

[2] Dewey, "The Reflex Arc Concept," pp. 358 ff., *Psychological Review*, 1896.

[3] McDougall, three articles in *Mind*, 1898.

ception of objects are important conditions for the rise of processes of recognition. We are still left with details unsolved as to the specific phase of the recognition process which is related to the sensory impressions on the retina and the specific phases of the process which are related to the motor element. We are simply called upon by McDougall's general formula to assume a broad parallelism between novel motor processes and consciousness. The same is true of Dewey's formula. To say that consciousness is related to the action of the whole reflex arc does not give us any definite answer to the question, What modification in consciousness will result from a modification in the motor outlet of a given stimulation? It is perfectly clear that like sensory stimulations do at different times pass through the central nervous system of an individual and emerge into the active organs through different channels. What is the effect upon conscious life of a modification in such cases of the avenue of motor discharge?

Besides these general theories there are a large number of more specific theories. Thus Münsterberg holds[4] that the openness of the motor channels is always related to the vividness of consciousness, and that the direction of a motor discharge conditions its value. Royce[5] holds that ideas are always related to activities. He says: "Our mental images of outer objects are never to be divorced from our reactions." Baldwin[6] also makes the reaction phase of an idea the *general* characteristic. These writers have all contributed important examples of the relation between motor processes and special phases of consciousness, but what we miss in these special examples is an exhaustive account of the relation of all motor processes to consciousness. If it is true that ideas are determined in character by their motor relations, how much more must it be true that percepts and the immediate processes of recognition are determined by motor processes. If it is true that vividness and value are related to motor discharges, how much more must it be true that the concrete relationship between conscious elements such as we find in space relations is also dependent upon the direction of motor discharges. While we are justified in criticizing Dewey and McDougall as too general, we must criticize these writers because they have furnished us with formulas which are not comprehensive enough.

The formula needed is one which is at once comprehensive and capable of application in detail to specific cases of various kinds. Motor processes are evidently related to some very general aspect of

[4] Chapter 15 on "Die Aktionstheorie," "Grundzüge der Psychologie," 1900.
[5] "Outlines of Psychology," p. 285 *passim*.
[6] "Mental Development," p. 313 *passim*.

consciousness, and yet this general aspect must in each particular case appear in some very definite, concrete manifestation. A phase of consciousness which is thus general and at the same time specific in its concrete manifestations is to be found in the fact of organization. Thus when all of the sensory elements of a given moment are organized into a single compact experience the special organization of the moment is a concrete specific fact, but it is a fact which exemplifies one of the most general and characteristic phases of consciousness. Thus when one has a sensation of red he relates this sensation to other phases of experience such as the background and the surroundings of the color in a definite, concrete manner. That he relates one element to the other factors of consciousness is an exhibition of the most characteristic fact in all mental life.

The fact of mental organization is directly related to the fact of the individual's reaction. As has been repeatedly pointed out in earlier discussions, if one asks why a given sensation has value for an individual he can not find the answer to the question in any consideration of the quality or intensity of the sensation itself. The sensation is of value by virtue of the active adjustment to which it leads, and this active adjustment will in turn be related to the complex of experience into which the sensation enters. Thus we find ourselves discussing at once motor responses and facts of conscious organization. That the two groups of facts are closely related can be shown by an examination of specific cases, and thus we shall be able to give the general formula detailed content and at the same time verify the broader statements which refer to the universal importance of motor processes as conditions of all conscious organization.

In the two preceding papers of this series feelings and space perception have been discussed as specific examples of mental organizations related to motor processes. All that was there said to show the advantages of those special explanations can now be turned to account in favor of the general formula of the dependence of all types of organization upon motor processes.

A new example of the specific application of this general formula may be found in the solution which it offers of the difficult question, why there are within experience different degrees of unity. Thus, to use Professor James's illustration, we recognize for certain purposes the table as a unity and for other purposes we recognize the table as made up of legs and top, each of the parts being in itself a unity. Certainly the reason why experience breaks up at times into larger and at other times into smaller unities must be clearly understood before we can have any coherent account of mental organization.

One of the recent writers who has dealt with this problem without utilizing in any way the motor processes is Professor Dodge.[7] Professor Dodge is led to his discussion of unity by his experiments on ocular movements, which experiments seem to furnish evidence against the explanation of perceptual unity as dependent upon muscle sensation. For some time Professor Dodge has been pointing out the difficulties with the movement sensation theory in its various forms. He now comes to the constructive treatment of the problem and attempts to show that the various retinal elements are organized into unitary groups through similarity in their sensory processes or in the "life history" of neighboring nervous elements. Thus if an external object stimulates a certain part of the retina, the life history of a group of retinal elements excited by the object will have a unity which depends upon the physiological fact that these elements are for a period of time stimulated in like fashion.

This position does not differ very much from that earlier advocated by Lipps.[8] Lipps also looks for the unity of mental processes in the fact that neighboring points on the retina are frequently stimulated from objective sources in the same way.

Both of these writers find the unity of mental processes satisfactorily explained by the unity of the external sources of stimulation. It is not easy to understand how they have overlooked the fact that subjective unity is of a totally different type from objective unity. For example, in the illustration used by Professor James, it is quite possible for a given observer to treat the mass of sensory experiences which he receives from a given table in more than one way. The unity in this case changes according as the subjective motive is modified. Certainly no explanation that depends entirely upon external reality will serve to account for this shifting of the observer's interest and type of thought.

In the case of Lipps there is very definitely assumed back of the unity of the retinal processes a combining and unifying entity which utilizes the qualitative likenesses of the retinal processes. Professor Dodge does not refer explicitly in his discussion to any unifying subject which utilizes the like sensations that come from the retina, but it is obvious that without some such assumption mere likeness of the retinal processes would not serve as a bond between the different sensory elements of experience. And even if an integrating subject is assumed, we are forced to ask what motives there are in this subject's life which lead him to make up his experiences now on

[7] "An Experimental Study of Visual Fixation," *Psychological Review, Monograph Supplement*, No. 35, pp. 72 ff.

[8] *Psychologische Studien*, 1885, pp. 1 ff. And also "Grundthatsachen des Seelenlebens," pp. 515 ff.

the one scale and again on another. When the matter is put in this form we see the advantage of recognizing that the subject is fully understood only when he is looked upon as conditioned in his concrete experiences by certain reactive tendencies which are radically different from the sensory elements which come from the outer world.

There is large justification, as has been pointed out in an earlier discussion, for the statement that sensations are objective processes constantly presenting themselves to consciousness, but determined in their value for conscious life by considerations that grow out of the uses to which they are put. These uses are always related to behavior, which is the active and expressive side of the subject's life. If the motives of behavior are such as to lead the subject to react upon large sections of his environment, then the sensory elements from these larger sections of the environment will naturally be grouped together. We may say that this is in response to a subjective demand, but we have by our formula of reaction defined more fully the nature of the subjective demand. We have recognized the fact that the subject is himself a complex capable of scientific definition through a study of his special functions.

It is interesting to note in Professor Dodge's discussion that when he gives a figurative account of the way in which retinal elements come to act in unity he represents the different groups of retinal elements as bound together by what he calls "rings of twine" (p. 74). One is prompted to ask whether the pegs themselves which Professor Dodge uses in his illustration furnish the twine which binds them together, or whether this binding is done by some outside agent. If it is done by some outside agent, then obviously all of the earlier discussion of likeness in life history is irrelevant except in so far as it can be shown that the outside agent is interested in qualitative likeness in visual processes. If we attempt to show why the outside subject is interested in such likenesses we find ourselves confronted once more with the problem with which we started, and we certainly can not free ourselves from this unproductive circle by referring to the unity that exists in the objects which impress our senses. Physical science long ago pointed out that the whole scheme of physical organization differs radically from the appearances which present themselves in consciousness. The fundamental reason why individual experience is of value is that in this experience external agencies are reduced to a wholly new form of arrangement. The new arrangement is significant to the individual in his personal life, but has no objective value until it comes back into the world of things in the form of a reaction of the individual upon these things. Professor Dodge speaks in his discussion of the fact that behavior "standardizes" the group organization of various

parts of the retina (p. 76). It is just this standardizing of the group organization which gives them permanence and value in subjective life. Why not recognize immediately that there is no fundamental distinction between standardizing and originating such an organization? Indeed it is very difficult to see how the process of standardizing could differ radically in character from the process of grouping itself. And certainly if any writer continues to use the two processes as separate, the burden of demonstrating the reason for two different kinds of processes rests with him.

The formula of activity which has been suggested as a solution for the problem raised by a critical examination of Dodge and Lipps has the widest application in explaining the diversities and harmonies in our conscious processes of recognition. Whenever we recognize two seen things as alike, we must attribute the recognized likeness not to the identity of retinal excitations, but rather to the fact that whatever may be the retinal cue, the reaction in the two cases is of the same type. We never see the same object twice in succession from the same point of view, and we never get from any object the same group of sensations. With every motion of the eye there is a shifting of the relation between the sensory facts of experience. And certainly with every one of the grosser bodily movements there is a complete breaking up of the sensory arrangement of the situation. We accept these fluctuations in sensation without the slightest disturbance of our personal lives. It is not important that we should discriminate minutely just how much of a person's face we can see, or just how much of the outline of a familiar object falls upon the retina. Anything will do which gives us a cue for the right action. In our discussion of perception it was pointed out that we do not fill in the sensory elements in the blind spot, or in the misprinted word; we simply utilize the deficient sensory experience in terms of our highly organized methods of response.

What is true in dealing with processes of perceptual recognition is strikingly evident when we come to deal with ideas. Here is a sphere of experience in which, as Royce and Baldwin have pointed out, the active processes are of first-class importance. Different individuals have the greatest variety of mental images which they retain in memory from their contact with the objects in the world about them, and yet there is a certain agreement in their modes of behavior whenever one of these ideas is called up through association. So also with the different periods of individual experience. The important fact in defining the psychological character of a general idea is not that we should always discover like elements in the different examples of this general idea; it is important only that

whatever the image in experience, the reaction shall always be the same. The reaction may get itself systematized in developed human experience into the mere act of articulation, or it may be an elaborate process of adjustment to practical demands. In any case the motor phase of the process is general and subjective in its character, while the content factors are particular and in themselves unorganized.

Unity of percepts and unity of ideas are accordingly phrases which describe an aspect of consciousness dependent on motor tendencies. Unity may be of various different kinds in different concrete cases; the formula is thus capable of bringing together under a single principle many different facts. Unity is, on the other hand, always a manifestation of the essential organizing tendency of mental life. We see, therefore, how this explanatory formula meets the demand which was expressed at the outset for a general formula which shall at the same time serve to guide in a detailed account of mental processes.

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SOCIETIES

THE SEVENTEENTH ANNUAL MEETING OF THE AMERICAN PSYCHOLOGICAL ASSOCIATION

THE seventeenth annual meeting of the American Psychological Association was held in Levering Hall of the Johns Hopkins University on Tuesday, Wednesday, and Thursday, December 29, 30, and 31, 1908. This was convocation week of the American Association for the Advancement of Science, and a notable company of scientific men, variously estimated at from two thousand to twenty-five hundred in number, were attracted to Baltimore by the programs of the society and the numerous organizations affiliated with it. If these numbers are a gauge of scientific activity, there is reason for abundant optimism regarding the status of research in America, for at no previous time have so many men of science been gathered together. The question has been repeatedly raised, however, whether the real aims of the scientific societies are best furthered by these large meetings with their surfeit of attractive programs, or whether a desirable concentration of interest is not secured by holding the sessions of the several societies in different cities.

This question was a live issue before the Psychological Association when the choice of the next place of meeting came up for discussion. Some of the members advocated segregation, and urged the acceptance of the invitation to go to New Haven, where the American

Philosophical Association will probably hold its next meeting. Others preferred to meet in Boston, together with the biological, anthropological, educational, and other sections of the American Association for the Advancement of Science, postponing the holding of a separate meeting until the following year, when the American Association for the Advancement of Science expects to go to Minneapolis. The choice was finally left to the Council with instructions to decide in the light of a vote of preference to be obtained from the entire membership.

Of the total enrollment of two hundred and twenty members scarcely one fourth were at Baltimore; and the attendance upon the meetings was not large, except at the joint programs. One session for the hearing of papers was held with Section L—the newly formed educational section of the American Association for the Advancement of Science—and one with the Southern Society for Philosophy and Psychology. On the afternoon of the second day the Southern Society and the American Philosophical Association united with the Psychological Association to hear the presidential address of Professor Stratton upon "The Betterment of Rival Types of Explication." The subject of the functional *versus* the structural or descriptive attitudes in psychology—a somewhat familiar topic for presidential addresses—received a fresh and suggestive handling from the point of view of the nature of the concept of cause which each type of explication involves. In the evening of the same day the societies met together again, to hear the address of Professor Münsterberg, president of the American Philosophical Association, upon "The Problem of Beauty." This eloquent defense of the absolute nature of beauty held the attention of a large audience. Following the address, the societies were entertained at the Johns Hopkins Club at a joint smoker. Still a third presidential address, that of Professor Sterrett before the Southern Society, was delivered on the afternoon of the third day, the theme being "The Proper Affiliation of Psychology—with Philosophy or with the Natural Sciences?"

That there has been no diminution in activity within the field of animal psychology was evident at the opening session. Professor Porter reported a continuation of the studies in the learning process and visual discrimination of birds, such as have characterized his laboratory at Clark University for some time. His assistant, Mr. Kallom, has found that ring-neck doves and homing pigeons learn to discriminate colors in from one third to two fifths fewer trials than the English sparrow. The discrimination of forms is much more difficult than the discrimination of colors. Professor Porter himself has been observing two single yellowhead parrots, and described

their behavior in detail. Instances of sudden imitation occur, not all of which can be explained as cases of so-called deferred imitation.

The problem of imitation in monkeys has been freshly and vigorously attacked by Mr. M. E. Haggerty. Three animals were trained to solve a number of ingenious mechanical problems in order to get food. Ten monkeys in the New York Zoological Park were then tested for evidences of imitation in learning these same tricks. A monkey was first given ample opportunity to acquire the trick himself. After his failure to do this, he was permitted to see another monkey perform the act, and then immediately given a new trial. In sixty per cent. of the instances the animal which had utterly failed to perform the necessary act alone did it after seeing it done by another monkey. In the course of the discussion Professor Thorndike and Professor Watson pointed out the desirability of certain additional control experiments, to determine how far other factors than those of imitation enter in to explain the large percentage of successes.

Professor Yerkes contributed the results of an investigation of the process of habit formation in the dancing mouse, aimed to determine the relation of age, sex, and intensity of inhibitory stimulus to the rate of acquisition. Extended experimentation with a large number of individuals disclosed the somewhat surprising fact that the older mice learn more rapidly than the younger ones when there is a large difference between the visual stimuli to be discriminated; but when the discrimination is a difficult one the younger mice excel. To account for such a difference it is necessary to recognize that the formation of this habit involves at least two distinct factors, namely, sensory discrimination and associative memory. Associative ability appears to improve between the ages of one and ten months, while ability to discriminate differences of illumination decreases. The most favorable intensity of the electric stimulus which furnishes the incentive to learning is found to depend upon difficulty of discrimination: as discrimination becomes more difficult the optimal stimulus is found to approach the threshold. The form of the learning curve is strikingly different for the two sexes.

Illness prevented Dr. Yoakum from reporting his investigation of "The Temperature Sense of Squirrels."

"The Phenomena of Peripheral Vision as Affected by Chromatic and Achromatic Adaptation, with Special Reference to the After-image" was the title of a contribution by Dr. Fernald. The lively interest which this paper aroused centered about its contribution to the question regarding the existence of colored after-images from unperceived color stimuli. Miss Fernald has found that when a

stimulus color through contrast with a white background has its limits so contracted that it is brought just below the threshold, a colored after-image is seen if it is projected upon a background whose degree of illumination is peculiarly favorable to that color.

At the afternoon session Professor Angell, chairman of the committee on the standardization of measurements and tests, presented a statement of what had been done during the year. Regarding types of imagination, it has been found that no one of the common tests is adequate. Tests of ability to command different forms of imagery do not always disclose the preferred form; tests for the form most frequently used do not show which is the most efficient. Moreover, the most useful form of imagery differs with different kinds of work. It is necessary to have tests of the various functional aspects of imagination.

The task of standardizing tests of association and discrimination has been brought so near to completion that Professor Woodworth and Dr. Wells, who have this portion of the committee's work in charge, were able to present a somewhat full report, with recommendations. Less detailed accounts were given of the progress made by the other subcommittees. The work of Professor Seashore upon tests of pitch discrimination is well advanced, and will doubtless be completed in time to form a portion of the forthcoming report of the committee, for the publication of which the association has authorized the expenditure of a sum not to exceed one hundred and fifty dollars.

Before the organization of this committee, two years ago, some doubt was expressed as to the expediency of the undertaking. The fruits of cooperation are already beginning to ripen, however, and the feasibility of a concerted attack upon the problems of standardization is no longer questioned. But the members of the committee alone can not be expected to solve the multitude of problems which must be cleared up before any final recommendations are possible regarding the best methods to be followed in taking many of the common mental measurements. The only possibility of making rapid headway lies through the active cooperation of a larger proportion of the membership of the association with their committee.

Following the discussion of the report of the committee on measurements, Professor Leuba gave a demonstration of a new apparatus for the study of movement and Professor Dodge demonstrated an ingenious lantern chronograph for classroom use. It is to be regretted that no other new apparatus was brought to the meeting for exhibition. In the future it will be the policy of the association to encourage a larger number of exhibits and demonstrations, the first

step in this direction being the appropriation of a certain sum to defray transportation charges on apparatus.

At the largely attended joint session on Wednesday morning, President Stratton called upon Professor Dewey, chairman of the education section of the American Association for the Advancement of Science, to preside. In a paper entitled "Psychological Investigations that will help the Educator," Professor Kirkpatrick asked of the psychologists a much more complete analysis of the complex processes of learning, and a study of them under the working conditions of the schoolroom.

An investigation looking in the direction pointed out by Professor Kirkpatrick, on the process of counting, was described by Professor Judd. The rate of counting a series of sensory impressions is dependent upon the ease with which the individual can establish an adjustment between this external series and an internal series which for many individuals consists in the imaged articulation of the numbers. The process of relating these two series is found to be less complicated and to require less time in certain sense realms, such as hearing, than in others, such as vision, where the necessary movements of adjustment of the sense organ are more complex.

After the discussion of Professor Judd's experimental contribution, Professor Thorndike read a paper in which he advanced the hypothesis that differences in "general intellectual ability" have their physiological basis in differences in the number of axone endings, and in the variety, extent, and excitability of their change of position. The need for some such hypothesis arises from the fact that the closest correlations of general ability with its several factors are found, not among motor abilities or abilities in sensory discrimination, but among the associative and selective processes.

As an improvement in the technique of experimentation in memory, Professor Seashore advocated the plan of using only three or four sensory stimuli which differ from each other in one respect only. Thus, a group of four successive tones, alike in all but pitch, may be given in any one of many arrangements. Among the advantages of using such homogeneous material are the possibility of continuing an experiment indefinitely with the same content and the adaptability of the method to the study of almost any phase of the memory problems.

Professor W. F. Dearborn reported that upon repeating a portion of the memory experiments of Ebert and Meumann he found that what appeared in the original experiments to be a general improvement from special practise is due, in part, to the effects of practise within the test series used. Orientation, attention, and changes in

the technique of learning are adequate to account for the rest of the improvement.

The session was brought to a close after a paper by Professor Witmer upon "The Study and Treatment of Retardation." The clinical, more minute methods of study were contrasted with the statistical methods. Each has a place.

In spite of unusually attractive programs elsewhere, a good number were present to hear the joint program of the afternoon. One of the most valuable contributions was that of Dr. Franz, upon "Sensations Following Nerve Division." Section of the ulnar and median nerves of the arm resulted in losses of sensation similar to those reported by Head and Sherren, but with these exceptions: certain areas of the skin which retained the epicritic sensibility nevertheless showed differences in threshold values so distributed as to indicate an overlapping of the nerve supply. Tests on hair and temperature sensibility also pointed toward the hypothesis of a double nerve supply for both.

Professor Ladd described two cases of cerebral surgery without anesthetics in which the patients retained consciousness throughout. Significant facts regarding the sensitivity of the brain substance and the nature of cerebral localization were pointed out; and the suggestion was made that the partial independence of cortical action which consciousness seemed to exhibit in these two cases gave hint that it may be possible for the life of self-consciousness to attain a complete independence of the brain.

In connection with a tachistoscopic determination of the least observable interval between visual stimuli to the two retinæ, Professor Hill found it necessary to distinguish two ways of attending. The sensorial or mechanical type, involving little ideation, is contrasted with the apperceptive or associative type, involving more complex central processes. The more suggestible observers belonged to this second type.

Professor Ogden essayed a "Contribution to the Theory of Tonal Consonance." Tonal consonance is the conscious correlate of a relatively simple and economic activity of the auditory nerves. How has the characteristic organic disposition arisen which renders the response of the nerves easier when the tones are related in simple arithmetical ratios? It has become established mainly through the racial experience of overtones.

Discussion was lacking upon Professor Ogden's paper and also upon that of Professor Leuba, entitled "The Origin of Religion." But the closing paper of the session, by Dr. Marshall, succeeded in stimulating comment. Dr. Marshall advanced the position that

"intensity" and "vividness" or "clearness," characterizing the focal portion of the field of consciousness, are terms which really refer to the same quality, but with this difference: we use the term "intensity" when we are dealing with sensations, but when we find this same quality in a wider context—perceptual, ideational—we feel the need of a different term, and call it "vividness."

Although the session of Thursday forenoon was largely monopolized by the annual business meeting of the association, time remained for Professor Scott to present "An Interpretation of the Psychoanalytic Method in Psychotherapy." Professor Scott maintained that the success which often attends this method of treatment for hysteria, obsessions, and phobias is really due to its skillful, even though unintentional, use of suggestion. The success of the method does not, then, prove the truth of the theory which underlies it—the theory of a realm of subconscious ideas in which suppressed emotional complexes may exist.

At the final session, Dr. Rogers described an optical apparatus by means of which the fingers, hands, feet, etc., are seen in other directions than their true ones. The displacement is felt so strongly that the kinesthetic sensations entirely fail to correct the illusion, and gross errors of movement are the result. The apparatus is useful in investigating the interrelations of visual and tactual space perceptions.

Professor Whipple presented a communication designed to stimulate interest in the psychology of testimony, a field bristling with problems of theoretical and practical importance to which American investigators have as yet given little attention. The main problems of the "Psychologie der Aussage" were enumerated, the methods discussed and the results to date summarized with a compactness and clearness which merited a larger audience.

At the annual business meeting Professor Judd, of Yale University, was elected president for the coming year, and was also appointed to represent the association on the council of the American Association for the Advancement of Science. To serve on the council of the Psychological Association, Professor Sanford, Professor Lindley, and Professor Thorndike were chosen. Seventeen new members were elected: Professor Berry, of the University of Michigan, Dr. Bingham, of Columbia University, Professor Bolton, of the State University of Iowa, Professor Boswell, of Hobart College, Dr. Brown, of the University of California, Dr. Burrow, of Johns Hopkins University, Mr. Cole, of Wellesley College, Dr. Davis, of the California, Pa., State Normal School, Dr. Ferree, of Bryn Mawr College, Dr. Goddard, of the Training School for Feeble-Minded Girls and

Boys, at Vineland, N. J., Dr. Holmes, of the University of Pennsylvania, Professor McKeag, of Wellesley College, President Pearce, of Brenau College, Professor Pratt, of Williams College, Dr. Starch, of the University of Wisconsin, and Dr. Waugh, of the University of Chicago.

In recognition of the efficiency of the local arrangements for the meetings resolutions were adopted expressing the gratitude of the association to Professor Baldwin, Professor Watson, and the Johns Hopkins University.

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THE FOURTH ANNUAL MEETING OF THE SOUTHERN SOCIETY FOR PHILOSOPHY AND PSYCHOLOGY

THE Southern Society for Philosophy and Psychology was organized in 1904, and held its first formal meeting at the Johns Hopkins University, Baltimore, Maryland, in December of the same year. The representatives of philosophy and psychology in the institutions in the southern states had not been feeling in any distinct manner the beneficial effects of the two national organizations, the American Philosophical Association and the American Psychological Association, whose influences streamed almost directly westward between more northern latitudes. In endeavoring to bring stimulation and guidance to the southern workers in these topics, the society planned to extend its interests so as to include both philosophy and psychology. This program was undertaken partly in recognition of the interrelations of these subjects, and partly in view of the special needs in the educational developments of the territory which it was to serve. Each succeeding meeting has shown an increasing attendance and interest among its members; and the institutions represented by its membership, from Florida to Missouri and from Maryland to Texas, have appreciably felt its activity and the standards it has brought forward.

The fourth annual meeting of the society was held at the same university on Wednesday and Thursday, December 30 and 31, 1908. It met in affiliation with the American Association for the Advancement of Science, the American Philosophical Association, and the American Psychological Association. More than one third of its members were in attendance.

The society united with the American Psychological Association in a joint session on Wednesday afternoon, one half of the papers presented being read by its representatives, Professors Franz, Hill,

and Ogden. It also joined later with the same association for the address of its president, Professor Stratton, on "The Betterment of Rival Types of Explication," and in the evening of the same day with the American Philosophical Association for the address of its president, Professor Münsterberg, on "The Problem of Beauty." A separate session was held on Thursday afternoon, at the close of which these two associations joined with the society for the presidential address of Professor Sterrett, on "The Proper Affiliation of Psychology."

In making his observations on "Sensations Following Nerve Division" in an individual in whose arm the ulnar and median, and probably also the medial antibrachial cutaneous, nerves had been cut, Professor Franz found many results confirming those noted by Head and Sherren. Some differences on touch indicate that there is an overlapping of nerve supply for the arm, while others on temperature and hair sensations point to a double nerve supply for these sensations, all of which are contrary to the findings of Head.

Professor Hill presented a preliminary report on "Some Aspects of Attention Involved in the Observation of Nearly Simultaneous Retinal Stimuli" as controlled by means of a tachistoscope which exposed illuminated disks to the periphery of both eyes. Suggestion and individual preferences seem to show influence as well as objectively uniform conditions.

It was maintained by Professor Ogden, in his "Contribution to the Theory of Tonal Consonance," that this unique experience may be regarded as the conscious symptom of a relatively simple and economic activity on the part of the auditory nerves. The origin of this function is traced principally to racial experience of overtones which through frequency of stimulation has organized dispositional tendencies.

The papers presented at the joint session by representatives of the American Psychological Association are mentioned in the account of the meeting of that association, pp. 96–97 of this JOURNAL.

In presenting the main features of "A Point of View in Comparative Psychology," Professor Watson took issue with those investigators who have recently endeavored to clear the field for explanations in animal psychology by carefully defining the criteria of consciousness which are designed to be of assistance in the interpretation of the facts of animal behavior. It was held that animal psychology is really embarrassed by the attempts to place the psychic amidst the facts which are obtained by observing behavior under the conditions of control. The tendency of human psychology in its scientific progress to get away from mere introspection as the chief basis for technique, it was urged, should be given greater room in

animal psychology. It is not so much a question of consciousness in the lower animals as, rather, how much phylogenetic interpretation of the psychic series as a whole can with advantage come to us through comparative psychology.

Dr. Dunlap, in his paper on "The Extensity Theory of Pitch," reviewed the several theories of pitch which are more or less claimants for recognition, and called attention to the group of phenomena which are more satisfactorily explained by the extensity hypothesis than by any of the rival theories; namely, obliteration of high notes by low notes, interval estimation, the influence of practise, pathological instances of non-fusing tones, the greater loudness of high tones, and pitch contrast.

In presenting "The Trend of the Clinician's Concept of Hysteria," Dr. Williams rejected Charcot's analysis of hysterical phenomena, reviewed many of the facts of hysterical attacks, and held that they could best be understood as due to suggestibility. Special merit was found in the technique and conclusions of Babinski.

The intellectualistic rather than the voluntaristic view obtained in Dr. Richardson's paper on "The Will and Belief," in which he considered the bearings of those higher syntheses of experience which are made in the effort to obtain a rational world. The impulses to construct a world can not be chiefly emotional or volitional, as the world is not irrational.

Dr. Furry prepared a sketch of a history of esthetics upon which he is engaged, but illness prevented its presentation. An extended note stating the main characteristics of his genetic point of view will be found in the full report of the meeting in the *Psychological Bulletin* for February 15, 1908.

A psychological method was applied to the metaphysical problem of immortality by Professor Messenger in his paper on "The Desire for Continued Experience." Emphasis was placed upon the radical distinction between endless experience and eternal existence, and the suggestion was made that the vain efforts at logical proofs for the latter should advantageously come to an end.

For his presidential address, Professor Sterrett undertook a discussion of the counter philosophical and scientific tendencies in psychology under the topic of "The Proper Affiliation of Psychology." The address was given only in part, as a basis for the discussion of the topic which followed. He made a special plea for the point of view which regards consciousness as an entity or an activity, and for the "old" introspective psychology as the logical form of any psychology.[1]

In the discussion Professor Hume reviewed the more or less lack

[1] The address will appear in full in the *Psychological Review* for March, 1908.

of affiliation between philosophy and psychology historically, and emphasized the necessity of a close relationship between them, both as to the central issues of the problem of "the soul" and as to the methodological phases of the two lines of endeavor. Professor Ladd insisted that psychology may properly become affiliated with all the sciences which can throw any light upon the problems of consciousness, while at the same time it forms the best possible scientific introduction to philosophy. These affiliations, however, do not involve any necessarily consequent relinquishment of independence on the part of psychology. The current discrediting of psychology is but a passing phase of scientific criticism.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Science and Philosophy of the Organism. HANS DRIESCH. New York: The Macmillan Co. 1908. Pp. xiii + 329.

"I should like to be as careful as possible in the admission of anything like a 'proof' of vitalism. It was want of scientific criticism and rigid logic that discredited the old vitalism; we must render our work as difficult as possible to ourselves, we must hold the so-called 'machine theory' of life as long as possible, we must hold it until we are really forced to give it up." Hans Driesch.

Those who have followed in recent years the reaction against the materialistic and mechanical interpretations of biological phenomena are familiar with the work of Hans Driesch. An invitation to deliver the Gifford Lectures at Aberdeen has furnished Driesch with the opportunity of bringing before a more general audience the conclusions to which his analysis of living phenomena have led. The first volume of these lectures (in English) has just appeared under the title of "The Science and Philosophy of the Organism." The second volume is soon to follow.

Few, if any, zoologists of modern times could bring to the task the many-sided abilities of the author of this volume. Trained in the most modern school of zoology, widely read and interested in philosophy and mathematics, possessed of an analytical mind of rare clearness, frankness, and insight, Driesch has compelled once more the attention of thinking men to the famous doctrine of vitalism.

That Driesch has written a fascinating exposition of his subject few will deny—provided they have not become too callous to consider any other interpretation possible than the current dogmatic materialism. Our purpose is to present Driesch's argument for vitalism and to examine critically the question of the validity of the evidence offered as a *proof* of the doctrine.

Driesch replies to those who maintain that "there are no fundamental

principles in biology which would bring it in any close contact with philosophy" that it will be his endeavor "to convince you that such an aspect of the science of biology is wrong; that biology is an elemental natural science in the true sense of the word. But if biology is an elemental science then, and only then, it stands in close relations to epistemology and ontology. . . ."

"Life is unknown to us except in association with bodies." "There are three features which are never wanting wherever life in bodies occurs. All living bodies are specific in form . . . all living bodies exhibit metabolism . . . all living bodies move." "It is *form* in particular which can be said to occupy the very center of biological interest, at least it furnishes the foundation of all biology." These statements are significant inasmuch as the proof of vitalism is found in Driesch's analysis in the study of form. It will no doubt strike the casual reader as strange that Driesch seeks his proof in form rather than in the psychic phenomena of the living world. It may be that the apparently simpler conditions surrounding form-production have led him to look here rather than elsewhere for the rigorous proof he seeks.

The first proof of vitalism is found in the relations of the parts of the segmented egg to one another. The results of experimental embryology have shown that the fate of each region of the blastoderm is intimately connected with its relation to other parts; "the fate of a part is a function of its position." Each part has potentially—for a time at least—the property of becoming any part of the whole, its location determines its development.

Driesch argues that the factors that determine the fate of each part can not come from without, nor can they come from the interaction of the parts. Therefore some other factor must be invoked to account for the localization of the organs of the embryo. Driesch thinks that while polarity and bilaterality—the main directors of the intimate protoplasmic structure—are given, their interaction could not be responsible for the manifoldness of development. He also believes that chemically different compounds existing in the egg can not account for development, because the form of elementary organs does not go hand in hand with chemical differences, and can not, therefore, depend on them. But since we know very little of the chemical composition of the substances of the egg, it seems to the reviewer that Driesch's argument would be less open to objection had he rested it on the well-known fact that a part already demonstrably specialized can, if severed from the rest, make a new whole, as when the foot end of hydra is cut off and quickly produces a new hydra.

If it is granted, then, that neither external factors nor the presence of chemically different substances in the egg accounts for development, can we explain the process as the result of a complicated machine-like structure preexisting in the egg? This is disproven, Driesch thinks, by the fact that if parts of the segmenting egg are taken away, the remaining parts, as well as those removed, will each produce new wholes. No machine is capable of behavior of this kind!

Since mechanical and chemical explanations fail, it follows that the developmental process must be autonomous. This autonomous factor Driesch calls "entelechy." He states that he will use this term only as a sign of admiration for Aristotle's great genius; "his word is a mould which we have filled and shall fill with new contents."

It will be seen that Driesch's proof rests on a process of exclusion. It fails unless all possibilities of mechanical explanation have been exhausted. To many thinkers the proof will amount only to a demonstration that at present we are ignorant of the factors that determine the formative changes in the developing embryo; but Driesch thinks that his analysis has entirely excluded the possibility of mechanical interpretation.

In this connection it is not without interest to call to mind Lehmann's recent important discoveries concerning fluid crystals. He has shown that a number of organic compounds—some of them, be it noted, known to exist in the living body—assume definite crystalline forms which can be accounted for on purely physical grounds. These crystals can take new matter into themselves and grow accordingly. If a part is removed, it promptly assumes the same form as the original whole. Here we have a machine, any part of it capable of changing into the form of the original whole. It need not be argued from this that the organism is a fluid crystal, although we think not a bad "case" might be made out in favor of this view—nor need we attempt to prove that the formative processes are the same for the fluid crystal and for the living body; but the example suffices to show that there do exist machines of which any given part can reproduce the whole form.

The second proof of vitalism is derived from the power of every individual to produce eggs capable of reproducing the parent organism—a fact so familiar that its use as a proof of vitalism comes as a surprise. Driesch argues that our inability to think of this process as one on the engine-pattern proves the autonomy of the process. But why so? If, as we have seen, a piece of a fluid crystal reproduces a new whole, why may not an egg which is only a piece of an animal arising by cell-division? A difficulty might arise in explaining how the egg divides; but cell-division is not itself put down as evidence of vitalism. To the zoologist the property of the organism to produce eggs appears in the same light as do all other cell-divisions. If the continuity of material (germ-plasm) be admitted, there is no special problem found here; what Driesch means is that since the germ material has taken part already in one development—forming as it does a constituent part of the early embryo—it is inconceivable on a mechanical basis that it could return once more to the starting-point. In part this property is something more than the ability shown by pieces of the embryo or adult to reproduce the whole, since the egg returns to the starting-point while the pieces press on to their goal without going through the early stages again. It will be admitted, we think, that here Driesch puts his finger on one of the most subtle biological phenomena. The difficulty of picturing to oneself how the return can be explained will be admitted by all thinking men.

Those who seek consolation in the idea of the continuity of the germplasm—meaning thereby that a stream of undifferentiated material is passed on from one generation to the next—ignore the well-known fact that in most cases all the cells take part in the early development. If it be argued that, although present in the embryonic organs, the germ-material is carried passively along—for which view there is little or no evidence—the fact that differentiated cells that have functioned as parts of the body may likewise return to the embryonic condition and pass through the development will sufficiently cover the case. How serious this difficulty may prove the future must decide.

Driesch's conception of the relation between entelechy and the material through which or by means of which it acts is well brought out in the following statement: "But what about the material continuity appearing in inheritance, which we have said to be almost self-evident, as life is only known to exist in material bodies? Is there not, in fact, a serious contradiction in admitting at the same time entelechy on the one side and a sort of material condition on the other as the basis of all that leads to and from inheritance?" He promises in the second volume to go further into the question; "At present it must be enough to state in a more simple and realistic way what we hold this relation to be. There is no contradiction at all in stating that material continuity is the basis of inheritance on the one side, and entelechy on the other." Both are at work at the same time. "Entelechy, at present, is not much more for us than a mere word, to signify the autonomous, the irreducible of all that happens in morphogenesis with respect to order in the one generation and in the next. But may not the material continuity which exists in inheritance account, perhaps, for the material elements which are to be ordered? In such a way, indeed, I hope we shall be able to reconcile entelechy and the material basis of heredity." The first part of this statement shows that Driesch is not as dogmatic in his advocacy of vitalism as some of his critics would lead us to believe. No serious objection is likely to be raised if one calls autonomous all that is at present irreducible in morphogenesis. On the other hand the attempt to treat the entelechy as something apart from and yet controlling the material basis will seem to most readers, we fear, to come perilously near to mysticism. One satisfying fact emerges from this discussion, namely, that we can, at will, divide the entelechy with a knife by cutting the egg in two, and produce two new entire entelechies thereby. It seems altogether delightful to be able to divide entelechy by so simple a means, but one may doubt whether the problem is simplified when entelechy as well as material is involved in the results.

A serious difficulty to Driesch's view may be found in the production of galls on plants—a difficulty dismissed by Driesch on insufficient grounds, it seems to us. As the result of the presence of a parasitic insect on or in the forming leaf, a complete morphological structure—a gall—is produced. Some of these galls show remarkable adaptations for the benefit of the parasite (but not for the plant) that produces the gall. At the time when the inhabitants of the gall are ready to emerge the gall

opens and sets them free. Now we ask in all seriousness, whence has come the entelechy in the gall? Does the plant contain the entelechy to produce adaptive structures whose presence is injurious to the plant, or does the activity of the enclosed insects introduce a new sort of entelechy into the plant? Obviously it would be advantageous to the plant never to set free the gall's contents, for thereby it would rid itself of its parasites forever.

Whether we agree with Driesch or not concerning the nature of the unknown factors of development, his attempt to hold our interpretation to the more difficult epigenetic lines of thought is, we think, deserving of the highest praise. Choosing the more difficult path, we at least keep open the way for further work and thought.

We have selected for comment that portion of Driesch's book that will, we believe, excite the greatest interest. But the book is enriched by excursions into many other fields more or less related to the main theme here discussed. The treatment of such matters as heredity, descent, adaptation, Lamarckism, the logic of history, etc., contains much original and independent thought. The handling of these matters will be found stimulating and suggestive. The second volume, in which a discussion of the more abstruse matters touched on in the present volume is promised, will be awaited with interest.

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Abriss der Psychologie.[1] H. Ebbinghaus. Leipzig: Veit und Comp. 1908. Pp. iv + 196.

This book is the original draft, slightly enlarged, of the contribution of Professor Ebbinghaus to Hinneberg's "Kultur der Gegenwart." It is introduced by an admirable sketch (pp. 1–17) of the history of psychology. "Psychology," Ebbinghaus points out, "has a long past, yet only a short history"; and with much discrimination, he indicates the obstacles in the path of the development of a science of psychology, the conditions of the growth of psychology, and the characteristic contributions of the great makers of modern psychology. His references to Spinoza, Hobbes, Hume, Herbart, and the physiologists and physicists of the earlier nineteenth century are especially suggestive.

Following upon this historical chapter comes the first division of the book, a discussion of "Allgemeine Anschauungen." This contains a brief but admirable summary of the physiology of the nervous system and a clear restatement of the doctrine, embodied in Ebbinghaus's "Grundzüge," of Spinozistic psychophysical parallelism. "Soul and nervous system," he declares (p. 39), "are not two separated, interacting [realities] . . . they are one and the same real, on the one hand as it immediately knows itself and is for itself, on the other hand as it exhibits itself to other similar reals when it is experienced by them—seen or touched by them, as we say." This familiar doctrine is based upon a very unconvincing argument. Like so many parallelists, Ebbinghaus assumes

[1] A translation by Professor Max Meyer is announced by D. C. Heath, Boston.

that he has proved his theory when he has shown the objections to the conception of the brain as "tool" of the soul. He would make his chief point—the methodological advantage of a parallelistic treatment of physiological and psychical facts—if, letting metaphysics alone, he laid stress merely on the empirically observed parallelism of the two classes of phenomena.

Ebbinghaus insists upon treating psychology as science of the soul, but he is very careful to define the soul as mere "totality (*Gesamtheit*) of . . . contents and activities" (pp. 41, *et al.*). In the concrete description of forms of consciousness he obviously, however, conceives the soul as far more than this mere *Gesamtheit,* or aggregate. He speaks, for example (p. 143), of "a characteristic independence of the feeling-activity of the soul," explains esthetic emotion through "Verinnerlichung zu meinem eigenen Ich" (p. 173)—in a word, he constantly implies the persistence, uniqueness, and fundamental reality of a soul (better, perhaps, called "self" or "I") which is no sum of parts. Indeed, the only argument of Ebbinghaus, in favor of the Humian theory of soul-as-aggregate, is based on the misconception that the soul (or I), in any other sense, must be a being "apart from" and "opposed to" its experiences. "The soul," he says (p. 41), "has thoughts, sensations, wishes; is attentive, . . . remembers. . . . Yet it is *nothing besides the totality* (*Gesamtheit*) *of these contents and activities*—[it is] not a being which would remain over if one were to abstract from all its experiences, or which, as an independent power, could oppose itself to them." By these words, Ebbinghaus is rightly disclaiming the mischievous Lockean fiction of an empty or "simple" soul-substance distinct from the self. But his objection has no force when directed against the conception of conscious self, or I, as fundamental, yet not opposed to its experiences, as persistent and unique (and so *more than* a mere sum of its contents or activities), yet as *inclusive* of these contents. In truth, this conception really underlies Ebbinghaus's own psychology.

The second main division of the book (pp. 43 *seq.*) discusses the elemental phenomena of the life of the soul (*die Elementarerscheinungen des Seelenlebens*). It presents few important divergences from the teaching of the "Grundzüge," in the successive consideration of (*a*) the simplest contents of psychic being (*die einfachsten Gebilde des seelischen Seins*), (*b*) the fundamental laws of psychic becoming (*die Grundgesetze des seelischen Geschehens*), (*c*) the outer effects of psychic events (*die aüsseren Wirkungen der seelischen Vorgänge*). Under the second head, Ebbinghaus seems to have grouped together, with a sort of Kantian heading, all that will not readily fall into his other divisions. Certainly the four topics, attention, reproduction, practise, and fatigue, are incompletely coordinated. Under the first head Ebbinghaus enumerates, as elemental contents, (1) sensations (peripherally excited), (2) sensations centrally excited (*Vorstellungen*), which, he claims, are of radically different nature, and (3) feelings—pleasantness and unpleasantness; for he rejects the Wundtian doctrine of the three dimensions. The most important part of this teaching, in the view of the writer of this notice,

is the admission (pp. 57–60) of certain elemental conscious contents, which Ebbinghaus calls the general attributes (*allgemeine Eigenschaften*) of sensation. In detail, this teaching is open to criticism. Three general attributes are named: spatial relation, temporal relation, and "unity and plurality." But the list is obviously too short—it omits not only two of the "general attributes" which the "Grundzüge" recognizes—the consciousness of likeness and of difference—but others as well, for example, the consciousness of opposition and of degree. Moreover, the differences between the space-consciousness and the consciousness of temporal relation are insufficiently emphasized.

The physiological conditions of sensation are briefly treated. Ebbinghaus does not even allude to the complicated modification of Hering's color theory which he suggested in 1893, but wisely abandoned by the time of the publication of the "Grundzüge." His present preference is for the von Kries theory (pp. 65, 66).

The third division of the book, "Complications (*Verwicklungen*) of the Life of the Soul," discusses, on the one hand, perception, memory and abstraction, speech, thinking and knowing, and believing (*Glauben*); and, on the other hand, feeling and acting. There is nothing peculiarly distinctive, here, in the description or classification. The argument against indeterminism seems inappropriate to a work on psychology.

The closing section on "The Highest Achievements (*die höchste Leistungen*) of the Soul" presents a brief but very interesting treatment of religion, art, and morality regarded as the soul's methods of defending herself against three evils: (1) the unknown future, (2) the inadequate material environment, and (3) evils that rise from social intercourse. This basis of classification has, perhaps, the opposite defects of being uncoordinated and yet a little artificial. For the psychologist, surely, religion and morality are better distinguished from art as having a personal, not an impersonal, object; and are better distinguished from each other in that religion conceives the personal object as divine, whereas morality is a conscious relation to human society. The gist of these distinctions is, indeed, embodied by Ebbinghaus in his teaching. With illuminating emphasis he presses the likeness between the religious and the every-day human relation. "To gain the help of the gods," he says (p. 162), "one must approach them just as one approaches men whose favor one would gain." "The free accomplishment of acts whose objective result is to further the preservation of the totality—these," he says (p. 183), "are the two basal criteria of morality."

No section of the book is, taken by itself, more admirable than that which considers the esthetic consciousness. It is described as pure happiness untouched by desire (*reine begehrungslose Freude,* pp. 169, 171) and the work of art is rightly said to tranquilize and to free the soul. In the detailed discussion of the work of art, the psychological point of view is not so closely held. The introduction of these closing sections is to be warmly welcomed as an indication that psychology is coming back to its own, that the study of sensation and affection, of association and emotion, is recognized as a necessary basis, not as an alternative,

of the study of the most developed and complex and significant of conscious achievements. Thus the little book admirably justifies the sound conclusion that "through the analytic and abstract study of manifold particulars"—and only through such study—one may hope to gain "a clear vision of the bewildering riches of the whole" life of the soul.

It is impossible to withhold comment on a bibliography of such haphazard nature as that of the "Abriss." Exclusive of the brief list of text-books and of the references appended to his historical sections (pp. 16, 17, 155), Ebbinghaus cites five periodicals (all German) and about fifty books and articles (three in French, two in English, the others in German). He makes no allusion to psychologists of the Meinong school and to writers in English who contend for the disputed theory upheld in his doctrine of the general attributes of sensation; he does not refer to Flechsig in his references to writers on the nervous system; and he cites the earlier instead of the later works of several writers (*cf.* p. 17). In so brief a summary it is, of course, unfair to ask for exhaustive references, but Ebbinghaus's omissions are unaccountable unless one assume that his bibliography is made on a basis of personal preference and of accidental acquaintance.

Mary Whiton Calkins.

Wellesley College.

Kants kritischer Idealismus als Grundlage von Erkenntnistheorie und Ethik. Oscar Ewald. Berlin: Ernst Hofmann & Co. 1908. Pp. ix + 314.

The aim of this book is at once critical and constructive. The book thus falls naturally into two parts. The first part, which covers about one hundred pages, is a searching criticism of the idealism of Kant. The criticism, however, is positive in its import and forms the basis for the second part of the book, in which are stated in some detail the author's own views concerning the solution of the problems which the critical philosophy forces upon us.

According to Dr. Ewald, the origin of the categories as Kant tried to deduce them can not be thought. And the first part of his book undertakes to point out why this is so. The essence of the discussion seems to be that Kant's fundamental error lies in his failure to differentiate sharply between the problem of perception and the problem of knowledge. Perception is viewed by Kant too much as a creation of the perceiving subject; the categories of the understanding are superimposed, as it were, upon the data of sensuous experience. Subjective idealism is the result. The way around this difficulty is to draw a sharp distinction between the problem of perception and the problem of knowledge, and to hold fast to the position that the latter alone forms the proper object of transcendental criticism. It is by this way that Dr. Ewald hopes to transcend the subjectivism of Kant and to give to the categories, if not complete objectivity, at least all the objectivity which really belongs to them. And the second part of his book develops this position in some detail.

The very least that can be said concerning Dr. Ewald's criticism of

Kant is that it is able and suggestive. On this point there can, perhaps, be no question. The criticism, which is generally fair and sympathetic, is evidently based upon a thorough familiarity with Kant's philosophy, and in many respects it is illuminating. It is a criticism which no student of Kant can afford to neglect.

But when one comes to examine the constructive part of the book, one is bound to feel that the results are problematic. Whether Dr. Ewald meets successfully the very difficulty which he justly finds in the system of Kant is, perhaps, more than questionable. His very sharp distinction between perception (*Anschauung*) and knowledge (*Erkenntniss*), by means of which he hopes to escape the subjective tendencies that seem to have engulfed Kant, ultimately proves to be a rather dangerous partition of experience. The logical result of such a violent division of the process of knowledge seems to be epistemological dualism; and whether the author succeeds in bridging the chasm which he thus makes in the realm of knowledge is, one is inclined to say, more than doubtful. If it be true that the problem of knowledge is *in toto* different from the problem of perception (p. 16), then it certainly is not easy to see how the categories of knowledge bear any intelligible relation to the subject-matter of sensuous experience. The position that the categories approximate realization in the realm of perception (pp. 223, 237, etc.) seems to involve all the weaknesses of Fichte's doctrine concerning objectivity. It would appear that Dr. Ewald is logically in the same predicament in which he finds Kant—bound either to subjectivism or to abstract dualism in his epistemology.

There is one feature of Dr. Ewald's book which is deserving of especial emphasis. Whatever may be the actual results of the book, its purpose is to build upon history. The criticism which the author makes of Kant is not made solely for the sake of criticism; rather is its aim to bring the system of Kant into vital and potent relation to contemporaneous problems, to discover in the system a secure foundation upon which further to build. And this historical attitude, which is ever anxious to learn from past thinkers, to assimilate and expand the truth attained by them and to avoid the errors into which they fell, is an attitude which, in the field of philosophy at any rate, can hardly be too strongly commended. If the book before us had no other merit than this one, it would certainly be worth the while.

G. Watts Cunningham.

Middlebury College.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. November, 1908. *On the Meaning of Truth* (pp. 579–591): Charles M. Bakewell. – Truth is conceiving an object in its total context. It is grasping the transient fact in its transcendent context. *The Nature and Criterion of Truth* (pp. 592–605): J. E. Creighton. – Philosophic truth not to be confused with the conditioned truth of science or practical need. The estimate of facts

requires a theory of experience, and this is a philosophy. The guide to the philosophic standpoint is the history of philosophy, whence our instruments for interpreting experience are derived. We can not, as the pragmatists try to do, define the nature of truth without reference to metaphysics. *Self-Realization and the Criterion of Goodness* (pp. 606–618): HENRY W. WRIGHT. – Recent criticism of the concept of self-realization as an ethical ideal proceeds from a failure to define properly the function of self. Since the self is an organizing agency, the object of supreme worth is an organized life. *The Hegelian Conception of Absolute Knowledge* (pp. 619–642): G. W. CUNNINGHAM. – Conception is the penetration of the object, which is thereby appropriated and possessed. When Hegel teaches that thought is conterminous with the real he states that experience and reality are one. *Reviews of Books:* Theodor Elsenhans, *Fries und Kant:* ELLEN BLISS TALBOT. W. B. Pillsbury, *Attention:* CHAS. H. JUDD. A. Fouillée, *Morale des idées-forces:* W. G. EVERETT. *Notices of New Books. Summaries of Articles. Notes.*

REVUE PHILOSOPHIQUE. December, 1908. *Le souvenir du présent et la fausse reconnaissance* (pp. 561–593): H. BERGSON. – A criticism of current explanations of the illusion that one is reliving some instants of one's past life, and an interpretation of thé phenomenon as a result of the interplay of perception and memory under conditions of a lowered tone of attention to life. *La triple origine de l'idée de Dieu* (pp. 594–612): G. BELOT. – The idea of God is the product of religious tradition, abstract reflection, and ill-defined, unexplained, subjective impressions. *La logique de l'analogie* (pp. 613–636): A. CHIDE. – Logicians are inclined to reduce analogy to second place, but it is involved in the establishment of all categories of inductive and deductive logic. *Revue générale:* F. Picavet, *Thomisme et philosophies médiévales. Analyses et comptes rendus:* Boutroux, *Science et religion dans la philosophie contemporaine:* F. PILLON. Arnal, *La philosophie religieuse de Ch. Renouvier:* J. BARUZI. *Notices bibliographique:* R. de Gourmont, *Promenades philosophiques:* L. ARRÉAT. Voivenel, *Littérature et folie;* Sighele, *Littérature et criminalité;* Mairet, *La simulation de la folie:* CH. BLONDEL. *Revue des périodiques étrangers.*

Avenarius, Richard. *Kritik der reinen Erfahrung.* Edited by J. Petzoldt. Band II. Leipzig: O. R. Reisland. 1908. Pp. xii + 536.

Elsee, Charles. *Neoplatonism in Relation to Christianity.* Cambridge: The University Press. 1908. Pp. xii + 144.

Joyce, George Hayward. *Principles of Logic.* New York: Longmans, Green & Co. 1908. Pp. xx + 431.

Külpe, O. *Immanuel Kant.* Leipzig: B. G. Teubner. 1908. Pp. vi + 163. 1.25 M.

Maclaren, Shaw. *What and Why, Being the Philosophy of Things as They Are.* London: Allen. 1908. Pp. xvii + 118.

Piat, Clodius. *Insuffisance des philosophies de l'intuition.* Paris: Plon-Nourrit. 1908. Pp. 319.

Pigou, A. C. *The Problem of Theism and Other Essays.* London: Longmans, Green & Co. 1908. Pp. viii + 139.

Rasmussen, Knud. *The People of the Polar North.* Compiled from the Danish originals, and edited by G. Herring. London: Kegan Paul, Trench, Trübner & Co. 1908. Pp. xix + 358. £1 1s. *net.*

Richert, Hans. *Schopenhauer.* Zweite Auflage. Leipzig: B. G. Teubner.

The Works of Aristotle. Translated into English under the editorship of J. A. Smith and W. D. Ross. Volume III. *Metaphysica.* Oxford: The Clarendon Press. 1908. 7s. 6d. *net.*

NOTES AND NEWS

THE Pathological Institute, of Wards Island, New York City, has sent out the following announcement: "The Neurological Institute, in Frankfurt on Main, in connection with the Frankfurt Special Classes (help schools) will arrange a two-weeks' course in 'The Problems concerning Feeble-minded and Psychopathic Children.' This is to be given the latter part of June, 1909. Scientific research, clinics, psychology, education and methods, and forensic questions will be the subjects of lectures and courses by specialists. The course is intended for those who are professionally engaged in this work, or are interested in it, or who wish to prepare themselves for it. It aims to offer a basis for extended work, a survey of the whole affair and its practical management. Accordingly the chief emphasis will be laid on practical presentations and demonstrations (anatomical, pedagogical, experimental, and presentation of patients). As far as possible all sides of the subject and their bearing on other branches of knowledge will be considered. The following courses and demonstrations are planned: normal and pathological anatomy of the juvenile brain; child psychology; psychopathology of youth; instruction of the feeble-minded; methods of teaching; organization; hand training; institutional affairs and care for the inmates; clinic for feeble-minded children; care and education in institutions and forensic psychiatry; juvenile courts; social care; speech therapeutics (articulation); hygiene; care for the deaf-dumb, the blind, and cripples. A series of schools for feeble-minded, institutions, clinics, and scientific institutes will be visited. The detailed program will appear in the spring. For particulars address the Committee: Privatdozent Dr. H. Vogt, Neurologisches Institut, Gartenstrasse, Frankfurt a. M., or Rector A. Henze, Wiesenhüttenschule, Frankfurt a. M."

A SERIES of lectures on "Charles Darwin and His Influence on Science" will be given at Columbia University on Friday afternoons, from February 12 to April 16, 1909, in 309 Havemeyer Hall, at 4:10 P.M., with the exception of the introductory lecture, which was given at 11:10 A.M., on February 12, the one hundredth anniversary of Darwin's birth. The lectures, which are open to the public, are as follows: February 12, "Darwin's Life and Work," by Henry Fairfield Osborn;

February 19, "Terrestrial Evolution and Paleontology," by William Berryman Scott; February 26, "Darwin's Influence on Zoology," by Thomas Hunt Morgan; March 5, "Darwin in Relation to Anthropology," by Franz Boas; March 12, "Darwin's Contribution to Psychology," by Edward Lee Thorndike; March 19, "Darwin's Influence on Botany," by Daniel Trembly MacDougal; March 26, "Darwinism and Modern Philosophy," by John Dewey; April 2 (date subject to change), "Cosmic Evolution," by George Ellery Hale; April 16, "Darwinism in Relation to the Evolution of Human Institutions," by Franklin Henry Giddings.

THE Research Club of the University of Michigan celebrated the Darwin centennial on February 17. The president, Professor Wenley, of the department of philosophy, gave the eulogy; Professor Reighard, of the department of zoology, spoke on "Darwin's Contribution to Zoology"; Professor Case, of the department of geology, on "Darwin's Contribution to Geology"; Dr. De Leng-Hus, of the department of botany, on "Darwin's Contribution to Botany"; and Professor Pillsbury, of the department of philosophy, on "Darwin's Contribution to Psychology." Further, in conjunction with the Michigan Academy of Science and the Society of Sigma Xi, the club will hold a public commemoration meeting on April 2, when the address will be delivered by Professor Scott, of Princeton University.

THE Darwin anniversary addresses delivered on Darwin Day before the American Association for the Advancement of Science have all been assembled and will be published at an early date by Messrs. Henry Holt & Company. The title of the volume will be "Fifty Years of Darwinism, Modern Aspects of Evolution and the Various Biological Sciences, Centennial Addresses in Honor of Charles Darwin before the American Association for the Advancement of Science, Baltimore, Friday, January 1, 1909."

PROFESSOR HENRY OSBORN TAYLOR has begun a course of nine lectures on "The Philosophy of the Middle Ages" at the Union Theologicol Seminary. The program is as follows: February 3, "Greek Philosophy as an Antecedent"; February 5, "Intellectual Interests of the Latin Fathers"; February 10, "Carolingian Handling of the Patristic Material"; February 17, "The Second Stage: Gerbert, Roscellin, William of Champeaux, Abelard"; February 19, "Reason and Authority: Abelard. Hugo of St. Victor: Mysticism"; February 24, "Universities: The Mendicant Orders: Aristotle and the Culmination of Scholasticism"; February 26, "Albertus Magnus and Thomas Aquinas"; March 3, "The Whole Scholasticism: Thomas Aquinas"; March 5, "The Breach in Scholasticism: Roger Bacon, Duns Scotus, Occam." The lectures are given in the Adams Chapel at four-thirty o'clock.

THE Society of Anthropology of Paris will celebrate the fiftieth anniversary of its foundation on the seventh, eighth, and ninth of the coming July.

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THE MIND'S FAMILIARITY WITH ITSELF

IT is frequently argued, more frequently asserted, and most frequently taken for granted, that mind is unlike every other known object in that in order to be known rightly it must know itself. In an earlier paper I undertook to discuss the mind's hiddenness from general observation; and to show that the difficulty under certain circumstances of knowing another mind lends no support to the contention that such knowledge is essentially impossible.[1] In the present paper I undertake to discuss the accessibility of mind to itself; and to show that this accessibility, evident and important as it is, nevertheless lends no support to the contention that mind is known only in this way. As in the earlier paper, I shall present positive evidence of mind, and seek to guard it from misconception, hoping that the results on the whole will be constructive rather than critical.

Before proceeding to more profitable considerations, I must refer briefly to the time-honored theory that the essential and indivisible essence of mind is explicitly discoverable in an introspective intuition. An appeal to intuition can not in the nature of the case be argued, but it is important to note the logic of such an appeal. It is not claimed that some observers find such a soul-element within themselves, but that such an element is universally present under the conditions of self-consciousness. It is not held to be an aberration of mind, but the mental constant. The theory thus virtually rests its case upon concurrence of testimony. But to be convinced of the absence of such concurrence, it is only necessary to compare the evidence in this case with that which testifies to the quality of the color blue, or the relation of the tone to its octave. In so far as it affects this issue, Hume's analysis has never been disproved. The neo-Kantian reply to Hume deals primarily with another issue. While it is doubtless true, as Kantians maintain, that synthetic categories condition experience, it is a wholly different matter to affirm that such categories emanate from a subjective core of activity known in self-consciousness. The latter proposition appeals to pre-

[1] *Cf.* "The Hiddenness of the Mind," this Journal, Vol. VI., p. 29.

cisely the introspective experience which Hume denies. Without rehearsing this ancient controversy, let me conclude simply that I find all the circumstances in the case to demonstrate a misconception, and one which I hope largely to account for in what follows. I shall forthwith devote myself to what empirically and in detail a mind knows of itself. I shall attempt to show what specific advantages distinguish the self-knower from the general observer; and to determine whether these advantages justify the contention that the mind is *really* known *only* by itself.

Common sense is characteristically equivocal in the matter. It is generally supposed that no one knows me as well as I know myself; but also that I am the last person whose judgment in the matter is to be trusted. Napoleon knew Napoleon better than did any one else, and yet it is quite possible that the historian is coming to know him better still. Napoleon may have deceived himself as to his real motives; or, through intense preoccupation with the matter in hand, have failed to grasp the contour and unity of his life. We can gather from such opinion only the tentative conclusion that an individual mind may be its own best knower in *some* sense, and at the same time be characteristically ignorant of itself in another sense. That such is in fact the case will, I believe, appear in the analysis that follows. And it will appear at the same time that the self-knower's characteristic advantage does not lie in his *understanding* of what his or any mind really is, but only in *the familiarity and convenience of his access to certain data.*

No one is so well acquainted with me as I am with myself. Primarily this means that whereas I have known myself repeatedly, and perhaps for considerable intervals continuously, others have known me only intermittently, or not at all. To myself I am so much an old story that I may easily weary of myself. I do weary of myself, however, not because I understand myself so well, but because I live with myself so much. I may be familiar to the point of *ennui* with things I understand scarcely at all. Thus I may be excessively familiar with a volume in the family library without having ever looked between the covers. Indeed, degrees of knowledge are as likely to be inversely as directly proportional to degrees of familiarity. Familiarity is arbitrary like all habit, and there is nothing to prevent it from fixing and confirming a false or shallow opinion. The man whom we meet daily on the street is a familiar object. But we do not tend to know him better. On the contrary, our opinion tends to be as unalterable as it is accidental and one-sided. Every one is familiar with a typical facial expression of the President, but who will claim that such familiarity conduces to knowledge of him? Similarly my familiarity with myself may actually stand

in the way of my better knowledge. Because of it I may be too easily satisfied that I know myself, and will almost inevitably believe that my mind as I commonly know it is my mind in its essence. It can not be said, then, that the individual mind's extraordinary familiarity with itself necessarily means that its knowledge of itself is exclusive or even superior.

But let us examine this familiar self in its characteristic aspects. Weariness of self doubtless arises from the habit of self-consciousness. But one may also be weary of the company of one's recurrent ideas and persisting memories; or of the "feel" of one's body, especially if it be an ailing body. And one may be excessively familiar with one's point of view, with the characteristic pettiness or angle of one's outlook. Finally, there is a deeper and more fatal weariness that arises from repeated attempts to solve one's personal problems and maintain one's high resolves. I propose to examine these familiar selves in order to discover whether they are in fact anything more than familiar, and whether any one of them proves to be the only key to the nature of mind.

1. *Self-consciousness.* I am inclined to believe that the prominence of this experience in traditional definitions of mind is due to the fact that it is characteristically habitual with philosophers. What but bias could have led to the opinion that self-consciousness is generically typical of mind? Surely nothing could be farther from the truth. If self-consciousness means anything, it means mind functioning in an elaborately complicated way. It is a case of mind much as society is. One does, it is true, test one's definition by applying it to complex and derivative forms, but one learns to isolate and identify the object from a study of its simple forms. It would be consistent with general logical procedure, then, to expect to understand *mind-knowing-itself* only after one has an elementary knowledge of the general nature of mind and the special function of knowing. Surely in this respect, at least, philosophy has traditionally lacked the sound instinct that has guided science.

But waiving methodological considerations, what is to be said of the cognitive value of my experience of self-consciousness? Suppose me to be as habitually self-conscious as the most confirmed philosopher. Have I on that account an expert knowledge of self-consciousness? There could not, it seems to me, be a clearer case of the mistaking of habit for insight. Upon examination my experience of self-consciousness resolves itself mainly into familiar images, and familiar phrases containing my name or the first personal pronoun. If I am sophisticated I may have learned to say, *I am I, cogito ergo sum, subject-object relation,* or even *I am my own other.* But these phrases are perfectly typical of the fixed and stereotyped character

that may be acquired by a confused experience, or, indeed, by an experience that is nothing more than the verbal formulation of a problem. And the more fixed and stereotyped such experiences, the more their confusion or emptiness is neglected. This is the true explanation, I think, of what is the normal state of mind in the matter of self-knowledge. Your average man knows himself "of course," and grasps eagerly at words and phrases imputing to him an esoteric knowledge of soul; but he can render no intelligible account of himself. That he has never attempted; he is secure only when among those as easily satisfied as himself.

Now is this not the very essence of intellectual complacency? Who is so familiar with farming as the farmer? But he despises the innovations of the theorist, because routine has warped, limited, and at the same time intensified his opinions; with the consequence that while no one is more intimately familiar with farming than he, no one, perhaps, is more hopelessly blinded to its real principles. Now it is my lot to be a self-conscious mind. I have practised self-consciousness habitually, and it is certain that no one is so familiar with my self-consciousness as I. But I have little to show for it all: the articulatory image of my name, the visual image of my social presence, and a few poor phrases. There *is* a complex state to which I can turn when I will, but it is a page more thumbed than read. And I am lucky if I have not long ago become glibly innocent of my ignorance, and joined the ranks of those who deliver confusion with the unction of profundity, and the name of the problem with the pride of mastery. No—so far I can not see that the royal road to a knowledge of self-consciousness has led beyond the slough of complacency. Either appeal is made to what every one "of course" knows, to the mere dogma of familiarity; or stereotyped verbalisms and other confused experiences are solemnly cherished as though the warmth of the philosophical bosom could somehow invest them with life. I confidently believe that the problem of self-consciousness will remain unsolved until the simpler problem of mind has been solved; and that this simpler problem will necessarily carry the investigator beyond his own domestic concerns. That which follows will, I trust, bear me out. Before proceeding, however, I must briefly mention two apparent difficulties which in principle have been already dealt with, but which the reader may associate primarily with self-consciousness.

In the first place, it is doubtless true that only I can be self-conscious of me. Your knowing of me is not self-knowledge. In this sense, then, you can not know me as I know myself.[2] But the diffi-

[2] Can it be this that is troubling Dr. Rashdall when he says: "No knowledge of that person by another, however intimate, can ever efface the distinction

culty has disappeared in the stating of it; for it still remains possible for both of us to know me, and to know me equally well.

In the second place, it is probably true in general, and certainly true in some cases, that my self-consciousness is more readily *detected* by me than by you. Although without knowing what it means, I am readily acquainted with the fact. For the general observer this is one of the peculiarly elusive states to which I have referred in an earlier paper.[3] And it also illustrates the superior convenience of introspection as a means of *collecting* mental content. By the automatism of introspection I am always more or less familiar with my states, and by the deliberate use of it I can verify and tabulate them. To the general consideration of this topic I shall now turn.

2. *Mental content.* It is well known that much the most convenient method of discovering what is in my mind is to consult me. I can affirm the fact with superior ease and certainty. At the same time, of course, I may be absolutely ignorant of the meaning of the fact. The subject of a psychological experiment is best qualified when he has no ideas concerning the nature of his mind. He is called on to affirm or deny knowledge of a given object, to register the time of his knowledge, or to report the object (not given) which he does know. The introspective accessibility of mental content refers, then, to an inventory that is preliminary to the study of mind.

Suppose my mind to be an object of study. In the first place it is necessary to collect my past experiences. By the method of general observation this is not an impossible task, but an enormously difficult and complex one. It would require the patient tracing of my bodily movements and their environment, an investigation of the capacity and history of my nervous system, and an analysis of my interests. Such a study would in the end doubtless throw much light on the rationale of my experiences; but it is evidently a clumsy manner of simply collecting these experiences, in view of the much more convenient method which is ready at hand. For I have myself been keeping a record of my experiences automatically, and by virtue of the capacity of recollection I can recover them at will. You may know these experiences, but you can not remember them exclusively and systematically. That method is reserved for the use of the mind that originally had the experiences. This does not mean that the facts can not be known except in so far as remembered by me. It would be absurd to say that the fact that I saw the King of Saxony

between the mind as it is for itself, and the mind as it is for another"? *Cf.* "Personal Idealism," p. 383. I have discussed this matter in principle in my paper on "The Hiddenness of Mind."

[3] In that paper I have attempted to show that such data are not hidden from general observation in any absolute sense. *Cf.* "The Hiddenness of Mind."

in the year 1903 is lost to knowledge except in so far as I can retrospectively recover it. An observant bystander would have known it at the time; or it may be a matter of general knowledge. But the convenience afforded by my memory is apparent. For in this way I may recall and verify the experience in question, and thus secure something approximately equivalent to its empirical presence; and, furthermore, my memory preserves not only this, but also other experiences likewise mine, and so already selected and grouped with reference to a study of my particular mind.

Or suppose that the study of my mind requires knowledge of its present content. I, who must in the nature of the case be having the object in mind, can have before me simultaneously the additional fact of its being in my mind. Such an introspective experience is commonly available, and is the simplest record of a complex datum. It is not a penetrating or definitive knowledge of the fact, but *is* a discovery of the fact.

It is doubtless true, then, that the collection of the states of a mind is most conveniently accessible through introspection. But the superior or even unique accessibility of certain facts to certain observers is not unusual; indeed, it is a corollary of the method of observation. Every natural object has what may be called its cognitive orientation, defining vantage points of observation. Data concerning the surface of the earth are peculiarly accessible to man; and data concerning the twentieth century to those alive at the time. This does not mean that man knows the earth best, or that we of the present day know the twentieth century best. Still less does it mean that our knowledge is exclusive. It means only that we are so situated as to enjoy certain inductive advantages. If a man were to add up his property as he accumulated it, he would always be in a position to report promptly on the past and present amount thereof, but it would not be profitable to argue that property is, therefore, such as to be known only by its owner. So any individual mind is most handily acquainted with its own experiences, past and present. The circumstances of its history and organization are such that without any exertion, or even any special theoretical interest, it is familiar with the facts. But this argues nothing unique or momentous. For, in the first place, introspection is not the only way of getting the data; in the second place, introspection merely reports these data without systematizing or defining them;[4] and in the third place, a similar convenience exists in the case of all objects of observation.

[4] Introspection almost inevitably obscures the real nature of mind, because it tends to be distributive, and so to lose sight of the unity or formula of mind. I propose to return to this point in a later paper.

3. *Proprio-ceptive sensations.* I have already had occasion to refer to the general fact that identical objects, without prejudice to their neutrality in the matter, may be known by different methods of cognitive approach. That of which I am an eye-witness may in the end be better known by you who have to be guided by verbal testimony and circumstantial evidence. We are now to meet with a most striking illustration of this principle. Concerning certain happenings within my body, I am, so to speak, the only eye-witness. This circumstance plays a very important part in the unique self-knowledge imputed to the mind, and in particular, I believe, lends specious significance to the self-conscious and introspective experiences which have just been examined. Let us first set down the general facts in the case.

In his "Integrative Action of the Nervous System," Sherrington writes as follows: "Bedded in the surface layer of the organism are numbers of receptor cells constituted in adaptation to the stimuli delivered by environmental agencies. [These receptors the author calls *extero*-ceptors.] But the organism itself, like the world surrounding it, is a field of ceaseless change, where internal energy is continually being liberated, whence chemical, thermal, mechanical and electrical effects appear. It is a microcosm in which forces which can act as stimuli are at work as in the macrocosm around. The deep tissues . . . have receptors specific to themselves. The receptors which lie in the depth of the organism are adapted for excitation consonantly with changes going on in the organism itself, particularly in its muscles and their accessory organs (tendons, joints, blood-vessels, etc.). Since in this field the stimuli to the receptors are given by the organism itself, their field may be called the *proprio-ceptive* field."[5]

Now my body lies beyond the periphery of every other body, and can, therefore, be generally observed only by *extero-ceptive* organs, such as those of vision, touch, etc. But while I may also observe myself in this fashion, my *proprio-ceptive* field enables me alone to know my body through other means. There is no occult reason for this; it is a matter of physiological organization. I am sensible of interior pressure and strain, or of the motion and muscular control of my limbs, in a manner impossible for any other observer, simply because no other observer is nervously connected with them as I am. I alone can be specifically sensible of loss of equilibrium, because my semicircular canals, though visible and tangible to others, have a direct afferent connection with my brain alone. Most important of all in the present issue is the fact that I am sensible in a very complex way of states and changes in my alimentary, circulatory, and

[5] Pp. 129, 130.

respiratory systems. Here, again, I am possessed of sensations from which other observers are cut off for lack of certain nerve fibers which connect these organs only with *my* cerebral centers.

Now what is the inference from these facts? In the first place it is to be observed that these sensations constitute knowledge of the body, and not of mind in the traditional sense. I have a species of cognitive access to the interior of my body from which all other knowers are excluded. My heart palpitates for me as it palpitates for no one else. But as it has never been argued that a physical organism is a thing known only to the mind inhabiting it, let us present the matter in another way. My mind contains sensations that can not be directly presented in any other mind. I alone can find these sensations in the ordinary empirical sense. But does it follow that you can not know them? Now, firstly, there is nothing *in* the sensation that you can not know. The peculiar quality of heart-palpitation is known to you in another context, and likewise the bodily locality which makes it mine. These factors must, it is true, be put together by you, but the result is nevertheless knowledge. And secondly, there is nothing *about* the sensation that you can not know even better than I. If I were to follow up the mere presentation of the sensation, and proceed to an adequate knowledge of it, I would necessarily rely on anatomical and physiological methods that have from the first been open to you. Indeed, here I am seriously embarrassed; for as you are cut off from *proprio-ceptive* sensations of my bodily interior, so I am largely cut off from the *extero-ceptive* sensations which are much more indispensable to a knowledge of sense-structure and function. In short, there is a portion of my mind that is presented in a characteristic way to me alone. I alone can have *proprio-ceptive* sensations of my own body, and therefore I alone can be coincidently and simply aware of my having them. In order that you may know them it is necessary for you to use your imagination, or some other relatively elaborate process.

Is this what is meant by saying that mind can be known only by itself? If so, then that contention loses all of its momentousness. For this is only a case of a very common class. It may even be contended that all existent things are such as to be presented instantly and simply only to a privileged group of knowers. In so far as spacial, events can be sensibly known only by those who enjoy a certain definable proximity, and in so far as temporal only by contemporaries. But this does not withdraw them from the general field of knowledge. I must use my imagination to know what the East Indian may know by opening his eyes; but my knowledge may none the less exceed his. And furthermore, even if it were granted that *proprio-ceptive* sensations can be known only introspectively, I

can scarcely believe that those who emphasize the uniquely internal character of mind mean that the mind consists in a confused and partial knowledge of the interior of the physical body!

A word more is necessary to show the full importance of the matter. The experiences on which we most rely for a knowledge of self contain a large admixture of *proprio-ceptive* sensations. This is true of the way "I feel," whether well or ill, and notably of the deeper emotions.[6] There is likewise a more or less constant experience of my body in its normal state of vitality. Finally, the very act of self-consciousness is itself attended by characteristic sensations due to bodily posture and respiratory changes. The presence of such sensations, diffused and blended, communicates to experiences of self a peculiar vividness and at the same time a complexity so bewildering as to be easily mistaken for unity. Thus we may now more justly understand the general import of self-familiarity. It is not only a habit, a stereotyped experience, but is also an intimate and, in respect of its given psychological form, an exclusive experience. But it stands condemned by these very characters. It is an accidental rather than an illuminating experience. For, on the one hand, it is arbitrarily fixed, prematurely concluded, as is the case wherever mere repetition is relied on; and, on the other hand, it attaches a wholly unwarrantable significance to a partial and rudimentary function of mind, namely, its confused sense-knowledge of bodily states.[7]

4. *Point of view.* We have already, I believe, dealt in principle with the uniqueness possessed by an individual point of view.

[6] I am making no explicit reference in the present analysis to feeling as a type of content, believing that I have virtually dealt with it in this paragraph and in that on *desire and purpose.*

[7] I have here referred to *proprio-ceptive* sensations as belonging to one state with self-consciousness, assuming that the patrons of self-consciousness would apply that term only to my consciousness of my consciousness, as distinct from my body. But there is, I believe, a propriety not commonly recognized in regarding the *proprio-ceptive* experience as really a knowledge of self. For my *proprio-ceptive* experience is largely a knowledge of *my organic action on the environment,* and it is this action when construed in a certain manner that really constitutes my mind. What I mean will appear more clearly in the light of a paper entitled "The Mind Within and the Mind Without," which I expect shortly to publish. *Cf.* Sherrington, *op. cit.:* "The other character of the stimulations in this field (the *proprio-ceptive*) we held to be that the stimuli are given in much greater measure than in the surface field of reception, by actions of the organism itself, especially by mass movement of its parts. Since these movements are themselves for the most part reactions to stimuli received by the animal's free surface from the environment, the *proprio-ceptive* reactions themselves are results in large degree habitually secondary to surface stimuli. The immediate stimulus for the reflex started at the deep receptor is thus supplied by some part of the organism itself as agent" (p. 336).

A point of view consists, so far as I can see, in a specific cognitive approach to a field of objects. It is a characteristic order of parts, belonging rightly to things, but selected by an individual knower's serial approximation to their full being. Every knower enjoys initial advantages, or suffers initial disadvantages, that distinguish his march to truth. Now a point of view in this sense is given originally only once, and to the knower that defines it. Another knower must arrive at it mediately, and when thus arrived at it will be immersed in another like point of view characteristic of the second knower. Furthermore, mediate knowledge of a point of view is peculiarly difficult, and in point of precision doubtless humanly impossible. For these reasons the simultaneous introspective awareness that an individual knower may have of his own point of view is marked and prized. But no new principle is involved. The exceptional knowledge which I have of my point of view reduces to readiness of access. It does not follow that I alone know my point of view, or even that that I know it well. Indeed, the very fact that I occupy my point of view, though it promotes familiarity with it, is otherwise prejudicial to my knowledge of it.

5. *Desire and purpose.* Finally, I am familiar with my own propensities. In so far as I am reflective, my impulses and ideals are repeatedly the objects of my contemplation and scrutiny. They are defined, adopted, rejected, or reaffirmed in every moral crisis. But just as certainly as this self-experience is more crucial and profound than the types already discussed, so certainly is it even less inaccessible to the intelligent observer. My interests are the defining forms of my life. In so far as they move me they can not be hidden away within me. They mark me among my fellows, and give me my place, humble or obscure, in the open field of history. It is possible, doubtless, to emphasize the introspective factor of desire. But desire in so far as content, has already been dealt with in principle; and desire as only content, is not desire at all. Desire as moral, as a form of determination, belongs not to the domestic mind, but to mind at large in nature and society.

To these or like factors we may, I think, reduce the mind's celebrated knowledge of itself. It appears that the mind is familiar and intimate with itself to an extraordinary degree; but this familiarity and intimacy, once circumstantially accounted for, is as much a symbol of confusion and bad habit as it is of knowledge. What exclusiveness it has it owes not to its insight, but to its incipiency and arbitrariness—so far is it from constituting a final revelation of truth.

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INEFFABLE PHILOSOPHIES

TEMPERAMENT—reason: romanticism—rationalism—these represent an inevitable dichotomy in the history of human culture. We have esthetic and artistic activities, and we have the procedure of natural science and of mathematics, the impartial analysis of "things as they are." These differences of point of view, far from being superficial, pervade all provinces of cognitive endeavor, and even philosophy has to reckon with them. For they are sufficiently baffling to give rise to the problem of philosophic methodology.

That the method of philosophy is that of logic, of articulate thought, and of a corresponding coherent formulation, no one, philosophers will say, has ever doubted. The fact is, however, that reputable philosophers have, in practise, often shown themselves blind to this elementary requirement. Many a philosopher might as well have called his work a work of art, a lyric poem, or an unfinished drama, as to have called it a philosophic system. For many a system-builder has forgotten the simple truth that although various things in life are neither coherent nor articulate, philosophy can not be one of those things.

Philosophic systems of to-day are many and varied. The academic air swarms with isms—subjectivism, materialism, monism, pluralism, idealism, realism, pragmatism. In the presence of this overwhelming array, how shall we discriminate between good and bad systems?

We must evidently adopt some basis of classification. Accordingly, we shall examine some *types* of philosophic systems, rather than distinct "isms," with the aim of testing their logical status. From this point of view types of philosophy will fall under two mutually exclusive classes, that we shall name, respectively, the effable and the ineffable. By the term "ineffable" we shall mean something much more radical than incoherence or self-contradiction. For a philosophy that does not logically cohere *as a whole* may yet involve a set of fundamental principles or propositions which are logically unassailable, and may require only the weeding out of a few supposed deductions in order to become completely coherent. Even the extreme case of a philosophy, nearly all the propositions of which are contradictory to its first principle or principles, is still not in the category of the ineffable, for although each of these propositions, in order to become a logical deduction from the fundamental premise or premises, would have to be decidedly remodelled, it may yet be true that the fundamental premises logically allow of rational deduction. Not so with the ineffable philosophy. Here we are denied the pleasure of asking whether any given proposition does or

does not cohere with the fundamental premises, for it is the essence of an ineffable system to be based on premises which, for whatsoever reason, lead to no logical deductions, and which thus render the questions of coherence, incoherence, consistency, and contradiction altogether meaningless.

It will be observed, then, that in the examination of types of ineffable philosophy the one thing of prime importance for our investigation is the fundamental proposition, or set of propositions, on which such philosophies profess to be based. For until we have ascertained whether these fundamental propositions allow of *any* logical deduction—until we have assured ourselves that they are effable—it is idle to inquire whether this or that particular part of the philosophy coheres with, or contradicts, these fundamental premises.

Psychologically and physically speaking, we may, to be sure, "deduce" from ineffable premises all kinds of propositions, and construct all kinds of systems. Logically, however, such "deductions" are meaningless; they are *voces præterea nihil.* For an assemblage of words which, in the strict logical sense, allows of no deductions, neither is nor contains a proposition, and it is meaningless to speak of such an assemblage of words as the basis of any philosophy. In short, an ineffable philosophy is one which, when taken with logical seriousness, condemns us to silence. If it is considered as an appeal to the reason, we find that no appeal has been made.

To the examination of some broadly representative types of contemporaneous ineffable systems we now proceed.

I. *Illusion philosophies.*—"Vanity of vanities, all knowledge is vanity. Only in the evanescent immediate is there a glimpse of the eternally real." This is the cry of the illusion philosophies. With varying nuances, these illusion types range from the most orthodox mysticism of the Hindu to the perceptual and subjective philosophies of the present hour. And of them all out and out mysticism is the frankest.

For his frankness we must admire the mystic. To him the world is somehow one; but this final oneness he can only *feel.* "Only in the immediate that has no beyond . . . is the reality. . . . Or, to repeat the Hindu phrase: *That art thou.* That is the world. That is the absolute." In other words, "Reality is that which you immediately feel when—thought satisfied—you cease to think."[1] This philosophy is thus open and straightforward. The mystic knows perfectly well that any statement concerning his reality is only illusion, Maya, an annihilation of that which can not be a matter of

[1] Royce, "The World and the Individual," Vol. I., pp. 82, 83.

discourse. In short, mysticism is the frankest case of ineffable philosophy.

Of other illusion philosophies, far less inclined to face their inevitably mystical implications, modern theories furnish striking examples, and with some of those we shall presently deal. For the moment let us note the confession of an expounder of Hegelianism. Says McTaggart, in the closing sentence of his "Studies in the Hegelian Dialectic," "All philosophy must be mystical, not indeed in its methods, but in its final conclusions." And in the last paragraph of his "Studies in Hegelian Cosmology," we find the complacent statement that "the conclusions of this chapter are, no doubt, fairly to be called mystical." These and numerous other instances demonstrate that even in highly constructive systems of to-day mysticism enters as a dominating ingredient.

That the very foundation of such philosophies lies in ineffability is too evident to require comment. For, granting the primary assumption of the illusion philosophies—seriously granting that the realm of discourse is the realm of illusion—it follows that from such a realm nothing articulate follows. *No* proposition that the illusion philosopher utters is either consistent with his fundamental postulate or contradictory to it; it is meaningless; it is not a proposition.

II. *Transformation philosophies.*—That reason "transforms" objects, that processes of thought distort reality, is the underlying motive of various philosophies.

Of such philosophies neo-Fichteanism and absolute voluntarism are typical. Reality, these declare, is something which we must feel, experience, appreciate, evaluate. Reality must be lived; it can not be described and analyzed. For the world of discourse is only an "imitation of an imitation." The world of propositions is only a "transformation" of the real. And the last word of philosophy must be not a logical proposition, but a conviction, an attitude—not a fact, but an act.

Thus neo-Fichteanism, thus all philosophies for which, as for that of Rickert, the "ought" is logically prior to all other concepts. These philosophies imply that as far as possible we must strip our conceptions of all logical content; that at any point where we are manipulating things logically, we have not yet reached the heart of reality. This is the principle of transformation. In addition, these philosophies generally involve also the doctrine of abstraction, which declares that objects of discourse are only abstractions from the full reality, and are thus not true of reality.

Are these theories logically tenable?

When we recollect that, rightly understood, abstraction is a legitimate process, and means only that not the whole, the totality

of anything, but definite components of it are under consideration, we perceive how fallacious it is to suppose that because thought is an abstraction, that is, deals with components of reality in a definite way, it is, therefore, to be condemned as "mere" abstraction and transformation, and to be contrasted with truth. Assuredly if this argument holds for thought, it holds likewise for feeling and volition, for they, too, are, in the proper sense of the term, abstractions from the total.

It should furthermore be observed that by abstraction, by logical isolation, we do obtain truths—truths which, to be sure, may in many cases happen to be quite unimportant. Their unimportance, however, should not blind us to the fact that *qua* truths they stand on the same level as the "highest" moral and religious truths. Or perhaps these unimportant propositions are not true because they do not represent the *complete* truth about an object? In that case, the principle of abstraction merges with the principle of completion, which will be examined in the next section.

Apart, however, from the doctrine of abstraction, the key-note of the philosophies under consideration lies in the principle of transformation. And this principle is so similar to the theory of the illusion philosophies that, but for the introduction of the factor of abstraction, the ineffability of the transformation philosophies would be glaringly manifest. For from their fundamental principle they reason out the conclusion that reason can never get hold of reality. They arrive thus at the philosophical assertion that there can be *no* philosophy. For to maintain that the last word of philosophy must be not a proposition, but an attitude, a conviction, is to maintain that there can be no last word. In other words, it is to revert to a form of mysticism. And as in the case of the mystic, so in the case of the transformation philosopher, his ineffable foundation is no foundation.

That the illusion and the transformation types of philosophy are truly ineffable is patent to all who take sufficient trouble to understand those systems. The transformation philosophy, to be sure, is far more pretentious than the illusion type, and is equipped with a subtler technical apparatus. Fundamentally, however, one is as ineffable as the other.

"Ah, but you do not really understand us," the illusion and the transformation philosophers will exclaim. And upholders of all sorts of varieties of ineffable experience will accuse us of a "narrow intellectualism." Mystics and Fichteans alike will warn us that we are trying in vain to span the continuous and incommunicable reality by means of discrete and effable reason.

To all such philosophers our rejoinder may be stated in brief: Just as we can not lift ourselves by our bootstraps, so we can not

consistently employ reason to prove the viciousness of reason. Hence, if for these philosophers reason is a solvent of reality, let them hold to their reality and eschew the unrealities of reason. And relinquishing the use of reason, they will necessarily give up all pretensions to philosophy. For philosophy, whether good or bad, whether desirable or undesirable, whatsoever its relation to reality, is forever, and forever must be, effable.

We have now to examine a type of philosophy which has at the present moment an enormous prestige, a type which implicitly and explicitly has proclaimed itself as the very acme of the articulate and the effable. We hope to show that it, too, is thoroughly ineffable.

III. *Completion philosophies.—All or none* is the motto of another type of ineffable philosophy, a type which we may call the completion philosophy. We refer to the well-known theories which assert that we can not know or understand a component without knowing and understanding the whole to which it belongs. This is the tenet of most absolute idealisms.

The essence of the contention of these absolute philosophies is that facts are so linked together that unless we somehow embrace the totality of the infinite chain, we have no knowledge at all. For fact *A* is logically linked by innumerable relations with fact *B*, and *B* with *C*, and *C* with *D*, and so on, interminably. Knowledge, then, must be the complete, the entire body of knowledge.

To state the same thesis in another form, we are confronted by the problem of the nature of knowledge. Is knowledge transmutative or additive? Additive knowledge is that which may be perfect knowledge of a part even though incomplete as knowledge of the whole. It allows for additions and supplementations without at any point becoming non-knowledge *merely* because it has suffered such addition. At any given stage it consists of a certain amount, and, at a later stage, of that amount plus a further increment. Transmutative knowledge, on the other hand, is the kind which may at any moment lose its validity as knowledge—that is, which may be transmuted by some higher point of view into non-knowledge. According to this theory, therefore, inasmuch as we, finite human beings, can not know everything, inasmuch as we can not place ourselves at the viewpoint of the absolute knower, we do not truly know anything.

On one or the other of these theories as to the nature of knowledge great philosophic systems have taken their stand; on the opposing theory they have generally heaped abuse. Rarely, however, has either camp recognized the fact that we are involved in a problem of pure logic—a fundamental problem as to the nature of relations. And the evident failure to cope with the logical difficulties at issue

is not lessened by the fact that the upholders of transmutative knowledge have often maintained their theories with all the subtleties of the dialectician.

In our endeavor to understand this crucial epistemological problem, let us meet the completion philosophers with their own method, with the same formal logic.[2]

The transmutative theory of knowledge asserts that nothing is wholly true excepting the whole truth; and therefore isolated truth—for example, any logical proposition—can be true only in the sense that it forms a part of the system which is the whole truth. But, even in this limited sense, isolated truths can be only more or less true, for when they are deprived of some aspects which make them a part of the whole truth they are changed from what they were in the total system. The truth, then, that a certain partial truth is a part of the whole truth, is itself a partial truth, and therefore can be only partially true. Hence we can never say with entire truth, This is part of a truth. Result: Everything which can be said about a partial truth is itself only a partial truth. And if no partial truth is entirely true, it is not even entirely true that no partial truth is entirely true.

Dropping this extreme formalism, we may say in brief that if we seriously grant the fundamental premise of the completion philosophers, it follows that on the basis of this premise we can no more declare of any given proposition that it is true, than we can declare that it is false. For example, the proposition "*A* is *B*" is not entirely true, since it has been isolated from the total system of truth. On the other hand, it is not entirely false, since it does find some place in the total system of truth. It contains, therefore, some aspects which are partially true and some which are partially false. Which of its aspects are partially true and which are partially false only the absolute knower knows. For us, finite beings, the discrimination of these aspects is forever an impossible task. Let us now consider *any other proposition,* such as "*M* is *N*." Concerning the truth or the falsehood of this proposition we know, according to the completion philosophies, precisely as much and precisely as little as we know in the case of the proposition "*A* is *B*." That is, we know that the proposition "*M* is *N*" is not entirely true and is not entirely false, and that it contains aspects which are partially true and aspects which are partially false. Which are the partially true aspects and which the partially false ones, again only the absolute knows. And this is exactly the extent of our knowledge regard-

[2] The following single paragraph is a condensed statement of some of Bertrand Russell's arguments in his article "On the Nature of Truth." (*Proceedings of the Aristotelian Society,* 1907, N. S., Vol. VII., pp. 28–49.)

ing the truth or the falsehood of *any other* proposition, even including the contradictory of our first proposition "*A* is *B*," namely, "*A* is not *B*." With reference to the truth or the falsehood of this proposition we can again only repeat what we have said with reference to the proposition "*A* is *B*." Neither of these is entirely true or entirely false, and each of them is partially true and partially false, and this is all that a strict construction of the completion principle permits us to say. For in this pair of propositions, as in any other pair, only the absolute can sift out the partially true aspects from the partially false ones. To us any proposition is logically on a par with any other, even including its contradictory. In fact, on strictly completion grounds we can not validly speak of the contradictory of a proposition. It follows, therefore, that a sincere and consistent adherent of the completion philosophy may at pleasure replace in his system any proposition, such as "*A* is *B*," by any other, as, for example, "*K* is *L*," or by their contradictories, "*A* is not *B*," "*K* is not *L*," and be logically not a whit the worse off.

A philosophy, however, based on a fundamental premise which permits us to replace indiscriminately any proposition by any other, or by its contradictory, is strictly a philosophy in which any proposition is logically as good as any other, and therefore no proposition is logically good for anything. For where everything can be asserted indifferently, nothing can be asserted differently. And unable to assign any meaning to truth and falsehood, such a philosophy can consequently formulate no true propositions. It is, therefore, ineffable.

Thus the fundamental premise of the completion philosophies, of the absolutisms of all shades and varieties, is its own *reductio ad absurdum*.

Illusion, transformation, completion—these are types of contemporaneous systems which are neither mutually exclusive nor severally exhaustive, for the spirit of ineffability in philosophy is subtly pervasive. In the very heart of these systems lurks the repudiation of reason. For on the basis of their own initial principles they can formulate no true propositions. They can predicate with validity neither truth nor falsehood. They are ineffable.

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REVIEWS AND ABSTRACTS OF LITERATURE

Principles of Secondary Education. CHARLES DE GARMO. Vol. II. *Processes of Instruction.* New York: The Macmillan Co. 1908. Pp. 200.

Education has still to fight for recognition as a subject of serious scientific study, and the fate of a new book by a leader in the field becomes in consequence a matter of more than common interest to protagonists of the cause. I may be pardoned, therefore, if in writing of Professor De Garmo's original and important undertaking I stray somewhat from the confines of a conventional review. The god of limits will have his full due, perhaps, if I first endeavor to present in brief the contents of the recent volume, and venture a humble opinion of its worth.

A word, however, as to its place and scope. It is the second in a series of three, which are to cover every phase of secondary education (the high-school period of our public system). The first volume, which appeared in 1907, dealt with the studies; the present volume deals with processes of instruction—methods of teaching; the third is to deal with processes of training. The aim and the plan of the series are admirable; and every student of education must rejoice that Professor De Garmo has set himself to this task. Education is progressing very properly according to the Spencerian formula—continuous differentiation of function in a constantly growing unity, and a study which serves to define the work of a part in its organic relation to the whole is heartily to be welcomed. This the present volume should help to do, by discussing the special nature and functions of the teaching process in the high-school period.

Professor De Garmo says in his preface: "It is to the new method of Bacon, refined, corrected, and supplemented by the older method first fully described by Aristotle, that the world owes its present condition and rate of progress. By whatever path he may prefer, the teacher must go back to these primal sources of thought and efficiency for his teaching models, because there are no others. This volume seeks in due measure to accomplish for the young teacher what Mill and Jevons and Mach have done for the man of science; namely, to impress upon him the few but vital mental processes that alone lead to enduring results."

The book is in two parts: the first discusses the "Scientific Basis for High-School Methods"; the second, "Scientific Method in High-School Instruction." The first part deals in order with the acquisition of facts, the explanation of facts, and forms of solution for the problem; it is an admirably lucid account of the ways in which the mind works in attaining knowledge—a purely logical discussion, but enlivened by concrete instances and well-selected historical illustrations.

The second part deals first with the educational status of the high-school pupil; here in eight pages Professor De Garmo has stated significantly and precisely the conditions which control the teacher in organizing his material. An immature mind; a body of knowledge already well authenticated, well developed; why not simply store the mind

with the knowledge? Because in adult life men and women must know how to use their knowledge, and because they must have power to acquire new knowledge. Hence the pupil must be led constantly to apply what he has been taught; hence teaching must not be telling, but a process wherein the pupil gets at his own truth under direction. As the mind of man must work in the discovery of truth hitherto unknown, so the mind of the child must work in the personal rediscovery of the truths men have already mastered. No power of thought can otherwise result. But thus to rediscover the whole body of known truth is impossible in the time allowed; therefore in each subject the teacher must select the typical, important, "developing" facts, concepts, and principles, and direct the activity of the pupil upon these as upon problems to be solved. I know of no clearer, simpler, or more cogent presentation of the necessities of the educative process as they affect its subject-matter. One can only regret that just at this point there is no discussion of how the pupil is to get at the problems;—on the basis of his own motives, or by coercion of the teacher; as an individual merely, or as a member of a group; to supplement a lack felt in his own experience, or to get ahead in the course of study? Professor De Garmo may intend to treat these questions in his third volume, but he ought here, I think, at least to have foreshadowed his views, for formal method is but an incident in the teacher's task of organizing the experience of the pupil, and the way in which the pupil is to get at his problems, deal with them, and test his results is on every count more important than the organization of the subject-matter itself.

There are but two methods for the discovery of truth, as the preface intimated, the inductive and the deductive. In each, as the pupil must use it, there are three stages: the processes of apperception, or the acquisition of the facts with reference to the problem to be defined; the processes of thought, or the explanation of the facts—the solution of the problem (as a problem of discovery); and the processes of application, drill in the use of knowledge. The Herbartian "formal steps" are here plainly indicated; but Professor De Garmo is not narrowly Herbartian in insisting that method shall always be inductive. He recognizes distinctly a "deductive approach" in which facts are acquired to test hypotheses framed in advance upon principles already known.

A separate chapter is wisely devoted to the application-step in method, the step most frequently and disastrously ignored in high-school instruction. A passage from this chapter (p. 157) affords a convenient summary of Professor De Garmo's formulation of scientific method in the high school: "Among the most familiar and most practised forms of application as a stage of method are those almost universally used in teaching mathematics and languages. Authority, observation, and experiment, here as elsewhere, furnish the data; inductive or deductive reasoning leads to their comprehension in the form of definition, cause, classification, or of generalization as seen in the theorem, rule, formula, principle, or law; while application tests these conclusions on new data, and extends them to a multitude of new cases, thus greatly enriching the content of

knowledge, strengthening the grasp of fundamentals, and most important of all, lifting insight to the plane of efficiency."

The book closes with an interesting chapter on combinations and variations of the two fundamental methods. The style is clear and pleasing; when need be, powerful. The method of the book itself is predominatingly deductive. The stage of application is provided for by topics for discussion; but hardly any of the distinctions to be learned are presented in problem form: the book itself, that is, does not completely provide for that process of instruction which it recommends.

So far the contents of the book; an opinion of its worth, in the light of its purpose, will be still within the limits of a review. The young teacher should find it highly profitable, but difficult. It will give him a logical basis to which he may refer many problems of class-room procedure; but he will need to apply himself conscientiously to the topics for discussion if he is to retain the logical distinctions of the book "for ready reference," or to make them his, as the preface hopes, to such an extent that he proceeds upon them instinctively. For the book confines itself strictly to the logical point of view; it deals with universal preconditions for the sequence, form, and arrangement of subject-matter in a lesson. The concrete situation which the teacher is to face is used lavishly for illustration, but it does not furnish the point of departure for discussion of the problems in method; and the book omits too often any discussion of how differences in aim in different schools and in different subjects will determine methods and the selection of topics. These things the young teacher ought to know: if he is to teach physics in a general high school, German in a commercial high school, or English in a classical high school, he ought to know how the aims of all education, the aims of his sort and stage of education, the aims in his subject—how they will all affect his choice of topics and the combination of methods which he must use. He ought to know, also, how his method is to differ from the method of the elementary school from which his pupils come; but this, if I remember right, Professor De Garmo mentions, casually, but once. In short, the book loses in value because it approaches its subject almost wholly from the side of the concept: it presents clearly, completely, and attractively the logical basis of the teaching process wherever that process becomes in any degree scientific; but the living institution with which the book is supposedly concerned, the American high school (now so much the storm-center of educational conflict) is not constantly and concretely present in its pages, and its mission remains, therefore, partly unfulfilled.

This leads me at length to the digression for which I first sought sanction. I would urge upon education, namely, that same policy which Professor James has urged upon philosophy—the approach to all its problems from the side of the concrete conflicts of experience. I am not enamoured of philosophical programs based on pragmatism; indeed, I hold that the concept must play a nobler rôle in the discovery of truth than the percept; but theoretical problems first become vital issues when they are crystallized in conflicts of practise, and they are best approached from the side of those conflicts. This is just now particularly true,

moreover, of education; especially of secondary education; and for two reasons. It is true in the first place because education has to fight a tendency, at times almost perverse, towards dogmatic assertion that the subject offers no material for truly scientific study. College instructors, who deal with high-school problems constantly (in the matter of entrance examinations), are often the worst offenders here. They cling to the old half-truths: Teachers are born, not made; and A teacher need only know his subject—experience will solve all his difficulties in method and management. They see—particularly if they are members of teachers' associations for advancement of the work in the several subjects of the high-school curriculum—they see the real problems of high-school method in process of constant discussion. They do not see that these problems involve, or lead out into, larger problems of educational theory; they do not see that the concrete conflict and the theoretical issue must be worked out together, one in the light of the other. And the academic remoteness of even worthy pedagogical productions does nothing to enlighten them. In the second place, educational theory ought to keep close to the practical issue because the practical issue is just now so momentous. If theory is worth anything as a guide to conduct in school affairs, now is her chance to prove it. From the kindergarten through the university there is educational war, with the battle-center in the high school. Thoughtful people everywhere are giving earnest consideration to the new plea for vocational training in adolescence; they look to the educational expert for light. Men who have never read a page of pedagogy, but who must shape school policies in great cities, are willing to listen to any one who can really inform them. Educational theory has nothing to lose, not even in normal classes, by ceasing to be esoteric and by giving up its own terminology. Like philosophy and religion, it must speak to all cultivated men in the language of their common world. Pragmatism has made us realize this much, at any rate.

I regret, therefore, that so valuable a book as Professor De Garmo's "Processes of Instruction" should have so little bearing on present issues. In the preface occur these words: "We should not . . . try to distinguish between cultural and non-cultural instruction. . . . Culture and discipline are . . . the inevitable concomitants of all good instruction. . . ." This I hold to be true, and of great consequence; but I wish most heartily that Professor De Garmo had pointed the moral for the American high school. Miss Susan E. Blow has done for the kindergarten, the most highly professionalized department of our public-school system, a service yet to be done for the elementary school, the high school, and the college: she has shown in her "Educational Issues in the Kindergarten" how differences in practise are connected with differences in principle, and how principle and practise stand or fall together. Educational theory will come into its own when it tries harder to do what economic theory is beginning to do—apply to the actual issues in every part of its field.

HENRY W. HOLMES.

HARVARD UNIVERSITY.

University of Iowa Studies in Psychology, No. V. Edited by CARL EMIL SEASHORE. *Monograph Supplements to Psychological Review,* Vol. IX., No. 2, June, 1908. Whole No. 38. Pp. 148. Baltimore: The Review Publishing Co.

The latest monograph supplement to the *Psychological Review* contains a set of studies from the psychological laboratory of the University of Iowa. First in the volume is an investigation of "The Perimetry of the Localization of Sound," by Daniel Starch; the second article is on the "Transference of Training in Memory," by George Cutler Fracker; the last, on "The Effect of Practise on Normal Illusions," is by many hands—the measurements having been made by Edward A. Carter, Eva Crane Farnum, and Raymond W. Gies, the whole investigation planned and written up by the first of those just named, and the introduction and summary contributed by C. E. Seashore, the editor of the volume as a whole.

The study on localization of sound is a continuation of an investigation published in the "University of Iowa Studies in Psychology," 1905. It takes up in detail certain problems suggested by that investigation. A sound objectively uniform in intensity, it had been noticed, seemed nearer and louder in some directions than in others. To measure the extent of this variation in apparent intensity and apparent distance is one of the problems of the present investigation. An apparatus was used that was capable of producing a sound variable in intensity according to definite units. The chief parts of the apparatus were an electric fork of 100 v.d., driven by a current of three amperes and three volts which were kept constant throughout the experiments, and a Seashore audiometer, an instrument devised for the purpose of controlling and measuring the intensity of sound. "The scale of intensities, which rises from one to forty, is based on the psychophysical law, so that the ratio of any two successive increments on the scale is psychologically the same." With this apparatus the threshold of hearing was determined for each observer when the sound came from different directions around his head. The threshold was taken to measure the apparent intensity, and the apparent distance was regarded as a function of this intensity. The experiments were made on eight persons, and 700 determinations were made in each direction.

The experiments show that sensitiveness of hearing is keener to sounds coming from the side of the head than to those from front or back. Sounds of objectively equal strength consequently appear louder and nearer when coming from a point in the aural axis than when located in any other direction. The ratio of sensitivity of the side to front or back is the same, irrespective of the absolute threshold—approximately 3:4. The experiments also show that there are two types of observers, those whose threshold is lower for frontal sounds and those whose threshold is lower for sounds from behind. There was no marked difference in the results when the observers heard with only one ear. Discrimination between different intensities in the same direction is of about the same

fineness whatever the direction may be, but pitch discrimination is decidedly poorer at the sides than in front or back.

Another series of experiments was undertaken to determine the influence of quality of sound upon its localization. The sounds of a singing flame, Galton whistle, tuning-fork, telephone, mere noises, and the human voice were used. The richer and more complex sounds, such as the human voice, noises, and telephone sounds, were localized much more accurately than the comparatively pure tones of the singing flame and of the fork and resonator. Localization by one ear was considerably poorer than by two, the region of greatest accuracy being on the side of the hearing ear, and the poorest on the opposite side. Angular differences of direction are overestimated in front and underestimated on the sides. Dr. Starch proposes to amend the accepted intensity theory of localization by recognizing the part played by quality. Monaural localization would be impossible if it depended upon the binaural ratio of intensity alone, and binaural localization would be much poorer than it is. "The traditional intensity theory is in the main correct, but quite inadequate. We must add to it the qualitative elements and the monaural quantitative elements. These two have coordinate value with the binaural ratio in the auditory perception of direction."

The second investigation reported in this volume, by Fracker, has to do with the question to what extent training of the memory with one sort of facts improves it for facts of another kind. Eight observers submitted to the training course, which consisted in memorizing the order in which four tones of different intensities were given. At the beginning of the course they were tested for their ability to memorize (1) two stanzas of poetry, (2) the order of four shades of gray, (3) the order of nine tones, (4) the order of nine shades of gray, (5) the order of four tones, (6) the order of nine geometrical figures, (7) the order of nine numbers, (8) the extent of arm movements. At the close of the course they were again tested. Four other observers took the tests, but not the training. Mr. Fracker comes to the conclusion that the trained subjects showed greater improvement in the final tests than did the untrained. He averages the gains of the trained eight in each test, and the gains of the untrained four, and compares average with average, showing a difference in favor of the trained eight for each test. If, however, record be compared with record, it is possible to match, from the tables submitted, nearly every low figure by one of the untrained four with an equally low one for the same test by one of the trained eight. Another finding of the investigation is that improvement in the tests was in many cases greater than in the training series. This would seem to indicate a very great degree of transference, but the significance of this result is somewhat clouded by the fact that the four who had no training are also shown to have improved (Table III.). The introspective notes of his subjects give the author good ground for observing that transference, in their cases, depended upon "the nature of the imagery employed in practise, rather than upon any other factor." These introspections confirm Professor James's remark

that "all improvement of memory consists in the improvement of one's habitual methods of recording facts."

The experiments of the last study in this volume were made on the illusion of the length of a cylinder, the T-illusion, the Mueller-Lyer illusion, and the illusion of distance between circles. The subjects were taken through a course of training in each illusion with a view to determining whether continued observation and study of the illusion would cause it to diminish. The investigation showed that so long as the observer has no knowledge of the existence of the illusion it persists with undiminished force. There were no exceptions to this rule. Those who have a knowledge of the illusion are less likely to decrease the illusion by practise if they are capable of maintaining a "perceptual attitude." One who knows the illusion can learn to make proper correction for it in a judgment. "Such correction process is at first focal in consciousness, but soon becomes so automatic that the closest introspection may not trace the correction process involved in the form of an allowance for the illusion." This study contains many interesting observations of details.

A. LIPSKY.

NEW YORK CITY.

The Problem of Form in Painting and Sculpture. ADOLF HILDEBRAND. Translated by Max Meyer and Robert Morris Ogden. New York: G. E. Stechert & Co. 1907. Pp. 138.

This first English edition of Hildebrand's monograph will make more accessible to students a famous and valuable contribution to esthetics. The work is translated into clear and agreeable English. (There is, however, a serious typographical error on page 61 which makes some seven or eight lines quite unintelligible.) It contains thirty illustrations and a portrait of the author, and is prefaced by a short biographical sketch of the author. Although the first German edition appeared in 1893 and the English translation is now more than a year old, one may, perhaps, be forgiven for indicating something of the contents.

The artist must make his composition look, not as a group would in stereoscopic vision, but as it would look if projected at a distance and hence flattened into a plane. This is the visual projection or *Fernbild* of which Hildebrand makes so much. Further: "The value of a picture does not depend on the success of a deception, as does the popular value of a panorama, but on the intensity of the unitary spatial suggestiveness concentrated in it." "The aim—the presentation of a general idea of space by means of a visual perception—is the same for painter and sculptor, and the work of each is directed by the same subjective requirements, however different may be their means of representation." Objects, he says, must be arranged in unified planes or layers of space as in relief-work. The third dimension is represented by a series of these layers one behind the other.

Discussing "Form as Interpretation of Life," he says that a great many expressive movements or gestures are not available for art because they do not lend themselves to clear visual impressions. "The artistic

unity of a group never depends on a relationship of parts resting solely on the functional or dramatic motive of the piece. What holds it together is rather its assertion of an ideal spatial unity in contrast with the surrounding space."

The book ends with a chapter on "Sculpture in Stone" which discusses the difference in the process of artistic imagination which arises from cutting a statue out of stone instead of modelling it in clay. It is an interesting addition to the psychology of imagination.

KATE GORDON.

WINNEBAGO, WIS.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. January, 1909. *Change and the Changeless* (pp. 1–22): H. A. OVERSTREET. – Reality must be conceived as both changeless and changing. Change as hitherto condemned is of the type that disintegrates or augments. Creative work (complete self-expression) is a type of change that gives worth to personality and can be predicated of a perfect being. *The Interpretation of the Apology* (pp. 23–37): THEODORE DE LAGUNA. – Plato's purpose was not merely to describe a dramatic episode. The "Apology" is a defense of the philosophical life. It was written at a period of greater maturity than has generally been supposed. *Some Notes on the Evolution of Religion* (pp. 38–47): IRVING KING. – The evolution of religion has been supposed to follow a determinate course through certain stages in a particular order. There is no reason to take this program seriously. The form of a people's religion depends on physical conditions and community interests. The Todas have lost their old religion and are evolving a new one appropriate to their present occupations. *The Third International Congress of Philosophy* (pp. 48–58): A. C. ARMSTRONG. – Philosophy seemed to be no longer on the defensive. It was generally felt that philosophy has a mission in connection with the general culture of the age. Especially noteworthy was the tendency to emphasize the selective, volitional, personal factors in thought and existence. There was great interest in pragmatism. The paper of Professor Schiller aroused a heated discussion. *Reviews of Books:* James Adam, *The Religious Teachers of Greece:* PAUL SHOREY H. Driesch, *The Science and Philosophy of the Organism:* E. G. SPAULDING. O. Ewald, *Kants kritischer Idealismus als Grundlage von Erkenntnistheorie und Ethik:* B. H. BODE. E. B. Bax, *The Roots of Reality:* A. O. LOVEJOY. *Notices of New Books. Summaries of Articles. Notes.*

Bordeau, J. *Pragmatisme et modernisme.* Paris: Felix Alcan. 1909. Pp. vii + 236. 2.50 fr.

Crozier, John Beattie. *My Inner Life.* 2 vols. Longmans, Green & Co. 1908. Pp. xiv + 288; ix + 288–562.

De Backer, P. Stanislaus. *Institutiones Metaphysicae Specialis;* tomus quartus: *Theologia Naturalis.* Paris: Gabriel Beauchesne & Cie. 1908. Pp. 306.

Hermont, P., et Van de Vaele, A. *Les Principale théories de la logique contemporaine.* Paris: Felix Alcan. 1909. Pp. 303. 5 fr.

Hubert, H., et Mauss, M. *Mélanges d'histoire des réligions.* Paris: Felix Alcan. 1909. Pp. xlii + 236. 5 fr.

Leblond, M. A. *L'Idéal du xix^e^ siècle.* Paris: Felix Alcan. 1909. Pp. x + 328. 5 fr.

Pratt, James Bissett. *What is Pragmatism?* New York: The Macmillan Co. 1909. Pp. xii + 256. $1.25 *net.*

Tisserand, Pierre. *L'anthropologie de Maine de Biran.* Paris: Felix Alcan. 1909. Pp. xi + 145. 10 fr.

NOTES AND NEWS

The *Nation* for February 18 prints the following letter concerning manuscripts and pamphlets bearing on the life and philosophy of Leibnitz:

To the Editor of the Nation:

Sir: Several years ago the International Association of Academies commissioned the Academies of Paris and Berlin to prepare a complete edition of the works of that "mathematician, philosopher and universal genius, Leibnitz." At that time the academies issued an appeal to the possessors or administrators of the public and private archives, libraries and collections of Europe, with the request that they would search out and calendar and describe all the material in their hands which might prove to be of value for the projected edition. It either did not then occur to the scholars concerned that there might well be hidden in the public and private collections of the United States a very considerable amount of such material; or else they assumed that there was none. During a long experience as secretary of the American Oriental Society, I had abundant opportunity to learn that the number of scattered Oriental manuscripts in the United States was so large as to be well worth cataloguing, and this wholly apart from the very important collection of Arabic manuscripts at Yale, and of Sanskrit and Prakrit manuscripts at Harvard. Considering all this, and also the American habit of travel, and the readiness and ability of Americans abroad to buy things of historic interest, it is much more than probable that well-directed inquiries among American collectors and librarians would not be unfruitful, if duly made on behalf of the Leibnitz project. Several days ago there came to me a letter from the secretary of the Royal Prussian Academy, Professor Hermann Diels, requesting that inquiries of the kind just indicated might be set afoot by me. In his name, accordingly, and on behalf of the academies concerned, I beg that you will

give due publicity to this letter, which recites their wishes. The appended list specifies the things that will be useful. Information concerning their existence and whereabouts is what is in the first instance asked for, and such information may be sent to me, or, if the sender prefers, to the secretary of the Academy, Professor Diels, No. 120 Potsdamerstrasse, Berlin, W. 35.

CHARLES R. LANMAN.

HARVARD UNIVERSITY, February 5.

LIST OF PAPERS AND PRINTS RELATING TO LEIBNITZ

(1) Manuscript works (essays, memoranda of any kind) which are known or supposed to be from the hand of Leibnitz. Manuscript letters known or supposed to be from or to Leibnitz. Manuscript works or letters by or to or from persons who stood in personal relations with Leibnitz. (2) Collections of manuscripts of the period 1664–1716, not yet properly examined or calendared, among which there might well be pieces falling under head 1. (3) Printed books in which are found manuscript notes or dedications or the like from the hand of Leibnitz. (4) Other printed matter of the period 1664–1716, whether (*a*) works of which Leibnitz is the known or supposed author, or (*b*) letters of which Leibnitz is the known or supposed sender or receiver (such as those "De la tolérance des religions" or the like). (5) Broadsides or pamphlets of the period 1664–1716.

THE following summary of the meeting of the Aristotelian Society on February 1 is from the *Athenæum* for February 13: "The meeting took the form of a 'Symposium,' to which Dr. Bernard Bosanquet, Mrs. Sophie Bryant and Mr. G. R. T. Ross contributed papers. The subject discussed was 'The Place of Experts in Democracy.' Dr. Bosanquet dealt with Plato's criticism of democracy. The distinction between the specialist expert and the expert in statesmanship was touched upon. Next the discrepancy between Plato's caricature of democracy and modern democratic constitutions was pointed out. There is no reason against finding the analogue of what we call democracy in the spirit of Plato's perfect state. That is characterized by three important principles, viz. (1) every creature in the commonwealth is to have a right and duty that satisfies its nature; (2) the career open to the talents; (3) the equal utilization of the abilities of the two sexes in public functions. Democracy, like the Platonic state, does not forbid a highly autocratic administration by the right person, but this is not a specialist; at least he is one whose speciality is to be a 'consummate artificer of freedom.' Thus the conflict between the doctrinairism of the mere specialist and the ignorance of the layman is to be reconciled. Mrs. Bryant divided the experts connected with government into three classes: (1) the rulers, (2) specialist advisers, (3) executive officials. The conflict between different classes of specialists was dealt with. Mrs. Bryant preferred to assimilate modern democracy to the type of the 'mixed State' in Plato's 'Laws'; yet in Plato we miss sufficient guidance as to the means by which his experts are, in the first instance, selected for special education. In the modern state selection and train-

ing are, for the most part, phases of a single process. Competition for distinction in local government paves the way for fitness to enter parliamentary life, and within this sphere selection and education go hand in hand. Mr. Ross criticized the assumption that the selective experience which rulers undergo must necessarily produce the best type of experts in governing. It is often held that democracy leads to the predominance of the mediocre. There are reasons, however, for rejecting this doubt, as no real democracy can survive which does not secure the service of men of exceptional talent. Democracy also requires the high development of the political intelligence of the governed. The theory that democracy means mediocrity is supported by an illusion to which artists are specially susceptible. The anti-democratic thought of Nietzsche is a case in point."

PROFESSOR W. RIDGEWAY delivered his anniversary address as president of the Anthropological Institute on January 26, on the subject "The Relation of Anthropology to Classical Studies." The following summary is from the *Athenæum*: "Professor Ridgeway pointed out the results that had followed from the use of the anthropological method in the study of the classics. Subjects which had long been obscure, or which had given rise to wild speculations, took upon themselves in the light of anthropology a clear meaning. For example, Aristotle's account of the origins of Greek Society—an account which had long perplexed scholars —can be explained by comparing it with institutions still surviving amongst primitive peoples; but it is only of recent years that any such comparison has been made, or such an explanation given. It is, however, not only in the domain of sociology or religion that such a comparative method is of service. The art of the Greeks, for example, can be shown to have been at one time in a stage comparable to that of the modern savage, from which it has directly developed. Again, a knowledge of anthropology will be of great service to an intelligent understanding of classical literature. The attacks which have been made on classical studies, and especially on the teaching of Greek, are in great measure due to the classical scholars themselves, who by their pedantry and their indifference to scientific method have caused the reaction which has set in against these studies. But if ancient literature and history are studied in the light of anthropology, much that was obscure will be explained, much that was imagined to be erroneous will be found to be true. To help to make the classics live is the part of anthropology."

M. HENRI POINCAIRÉ became a member of the French Academy on January 28, succeeding Sully Prudhomme. The address of welcome, a eulogy on the new member, was pronounced by M. Frederic Masson. M. Poincaré replied at equal length.

IT is reported that Eduard Zeller during the last years of his life wrote out his reminiscences, intended for his intimate friends only, and which are now to be printed, but not published.

IT is reported that Professor Hugo Münsterberg will publish this spring a work entitled "Psychology and Crime."

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

THE IDEA OF A PHILOSOPHICAL PLATFORM

AT the Baltimore meeting of the American Philosophical Association two papers[1] were presented which emphasized the advantages that philosophy would derive from the formulation by its representatives of a body of doctrines and principles that might be regarded as at least provisionally established. Such a platform, it was argued, would in several ways promote the interests of philosophy. In the first place, it would remove from philosophy the standing reproach that it has arrived at no certain conclusions, and is therefore unworthy to be called a science. And, secondly, it would enable philosophy to take its place and perform its proper function in the development of scientific thought and social practise. Philosophy must prove its utility by furnishing principles of guidance and criticism in both the social and the natural sciences. If the demands from these sources are to be met, it must be possible to say in philosophy, somewhat as we do in the case of the other sciences, that there is a body of truths and principles which are accepted, by the competent representatives of the subject, as established. Workers in other departments, and intelligent outsiders in general, ought to be able to appeal to the results of philosophical investigation as they appeal to the conclusions of physics or of biology. Moreover, a formulation of results and principles would furnish to philosophers themselves a starting-point for further investigations, and thus promote unity and continuity of effort.

As only the abstracts of these papers are before me as I write, I do not wish to attempt any detailed criticism of them. It is to be noted, however, that both papers maintained that some formulation of established results is not only desirable, but also possible, and both proceeded to furnish suggestions as to how this end might be attained. These suggestions can not be discussed at present, but the general issue raised by the papers seems important and worthy of consideration.

It is, of course, a notorious fact that philosophers do not agree;

[1] "Concerning a Philosophical Platform," by Karl Schmidt, and "The Doctrine of Histurgy," by Christine Ladd Franklin.

and this is commonly regarded as a proof that no objective certainty is possible regarding the problems with which they occupy themselves. The lack of any established body of results which can be summed up in a series of definite propositions that the outsider can directly appropriate and apply in some field of practise, is doubtless another source of the wide-spread conviction that philosophy neither bakes bread nor can any longer give us "God, freedom, and immortality." As students and teachers of philosophy we do not, of course, admit the truth of these charges. They have been adequately refuted, at least in their popular form, by having been shown to rest on a fundamental misconception of the nature and function of philosophy, which is not one of the special sciences, dealing with a particular field of the phenomenal world, but is an attempt to understand and evaluate the standpoint and results of all the sciences and the meaning of experience as a whole. Philosophical results can not then be set down in the form of a statement of particular facts, and still less can they be separated from the problems and processes of which they are the outcome. It is undoubtedly true that in every science which has attained any considerable degree of organization the result derives its significance from the context in which it arises, and, taken by itself, is largely unmeaning; but in philosophy, for obvious reasons, it is still less possible to regard results as "fruit" which is external to and separable from the tree which bore it.

Moreover, as has often been pointed out, the special sciences attain to demonstrative certainty just in proportion to the abstractness of their procedure. The well-established body of facts which they seem to exhibit rests in every case upon assumptions and hypotheses. These, as scientific men know well, are often vague and sometimes contradictory. And when these ultimate principles come up for discussion in science there is found in this field scarcely less difference of opinion than obtains among the partisans of philosophical systems. These considerations and others of like nature are quite familiar to philosophical readers, and do not need to be further urged in this place. It may seem, however, that they were not sufficiently kept in mind by the authors of the papers to which I have referred above. Both writers, I venture to think, have had before them the ideal of established conclusions in philosophy which should be analogous to the accepted results of the special sciences. From the very nature of philosophy, it ought to be evident that such a platform is neither desirable nor possible of attainment.

Nevertheless, though we reject the idea of an officially established creed in philosophy, we can not deny that some agreement, especially regarding the nature of the problems that can profitably and significantly be raised and the kind of answers which they demand, is an

essential condition of the existence of the subject as a rational branch of human inquiry. For without such agreement, more or less explicitly acknowledged by philosophers, no fruitful cooperation or discussion would be possible. Anarchy would have come again, and each man would claim to be the measure of all things. A platform, then, does, in some sense, exist, and always has existed, in philosophy. In spite of the popular impression, philosophy is not a mere warring camp without settled principles or permanent gains. Unity of view is not lacking in philosophical discussions, but has afforded the basis which has made criticism possible. In philosophy, one's foes are frequently of one's own household—as is illustrated, for example, by Aristotle's constant polemic against Plato, or Hegel's reiterated criticisms of Kant and of Fichte. Criticism is the atmosphere in which philosophy draws its breadth; but, in order that this criticism shall be effective and significant, there must be a common problem and a large measure of agreement regarding the conceptions that are applicable in seeking to solve it. Without this, philosophical discussion tends to degenerate into mere logomachy, a verbal conflict from which each party emerges without honor or profit.

A philosophical platform, therefore, as we have said, exists necessarily, since philosophy exists as a rational and objective mode of inquiry. But it is necessary to go on to ask, In what does this platform consist and how has it been constituted? There have been no ecumenical councils to settle philosophical creeds, or any explicit formulations of comon doctrines on the part of philosophers. Moreover, when we read the discussions of our own time or of any particular generation, they seem to present nothing but the differences of individuals and of parties, and to afford no possible basis of agreement. This appearance is, however, deceptive. Unity is being achieved in and through the process of emphasizing differences. Out of the eater there comes forth meat. This unity often comes to light in a form and to a degree that can be appreciated as the consequence of the work of a few years, or a single generation. But it is only when we look to the history of philosophy as a whole that we become conscious of the fundamental basis of agreement, the real process that renders philosophy objective and real. For the history of philosophy is not a mere collection of individual opinions, but a process of development. The notion of development, however, is conceivable only when it is seen to involve the continuity of a universal principle which is present in all stages of the history of philosophical thought, and of which these stages must be regarded as the progressive determination. Without such a conception, I do not see how it is possible to speak at all of the development of philosophy. And if it is impossible to discover any genuine development in the history of philosophy, if the term

"development" is only a figure of speech, then the efforts of any individual to give an objective interpretation of his experience must forever remain fruitless. So long as the individual believes that reason and philosophical truth are merely in him, and are not manifest in the world and in the history of thought, his deliverances are not likely to be of great value. By his own unaided efforts no man can reach philosophical truth, any more than he can become rational or moral by isolating himself from the beliefs and practises of society. To become a philosopher, he must assimilate and reproduce in his own thinking the development of philosophical problems and answers as these are shown in the course of history. In this way alone will he attain objectivity of view and find a platform on which he can unite with other philosophers.

It may be objected, however, that experience has abundantly shown that the history of philosophy can furnish no objective standard of philosophical truth. Of this history it may be well said,

> Hic liber est in quo quaerit sua dogmata quisque
> Invenit et pariter dogmata quisque sua,

since there is opportunity for the widest divergence of opinion in the interpretation and evaluation of the various philosophical systems. One school, for example, maintains that the philosophy of Kant and the post-Kantian idealists represents the culmination of modern philosophy, while others tell us that the true line of development runs around, not through, Kant. Each one, it may be said, will find in the history of philosophy his own favorite doctrines, or illustrations of the errors which he is most anxious to combat and expose, and will thus in the end use his own conceptions as the standard of evaluation. Hence the study of the history of philosophy can never make a philosopher: one must reach his conclusions by his own independent processes of thought, or with the aid of contemporaries who are occupied with the "vital" problems of the present time.

Now it is unquestionably true that the mere acquaintance with the facts and external features of the different historical systems is of no great advantage, and in itself does not make a philosopher. But to comprehend the *development* of philosophical thought is to gain an understanding of the significance of philosophical problems and the true function and relations of the conceptions that appear in the course of its history. This involves an active process of philosophizing on one's own part: it requires us to interpret, reconstruct, and evaluate the historical results through our own thinking. The process of interpretation and evaluation does not signify, however, that we have the right arbitrarily to construe these systems in an external way in accordance with any preconceived notions of our own. There is a constant process which is at once a giving and a

receiving. We neither passively assimilate nor arbitrarily construe, but by following and apprehending the inner movement of the history of philosophy we are qualified to enter into it, and become a part of it. If there is any truth in the assertion that the history of philosophy is a genuine development, then to comprehend this is an indispensable part of philosophy itself. If, on the other hand, history presents no real development, it would seem that the opponents of philosophy are right in their belief that the history of philosophical opinions has demonstrated the impossibility of philosophy as a subject of rational human investigation. For what hope is there in individual effort if the thought of the race has proved totally incompetent to its task? And what possibility is there of cooperation, if the past has given us no platform on which to stand?

There is, of course, nothing new to philosophical readers in the views which I have here attempted to express. But they seem to be of interest in relation to the question of a philosophical platform, which was brought forward at Baltimore. They also seem to me important and worthy of consideration in view of the evident lessening of interest in historical studies among American philosophers at the present time. If it is true that some agreement as to the aims and method of philosophy is essential both to the progress of philosophy itself and to the influence and position of the subject among the other sciences, and if, further, this agreement can be attained only by arriving at an understanding of the meaning of philosophy as it is exhibited in its historical development, can we afford to neglect historical studies or to regard them as of secondary importance? For the continuity of our thought with the past is at the same time our bond of union and basis of objectivity, and, as such, it, therefore, is the only thing that insures the reality of philosophy at the present time or that furnishes a guarantee for its future.

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THE TIME PARADOX IN PERCEPTION

THAT the object of perception is temporally present, that its temporal status is strictly *now*, seems obviously given in the fact of perception itself. The neighboring house which I see through my window apparently presents itself to me at the very instant of vision. Perceptive experience seems to require by its very nature that subject and object (whatever facts are indicated by these terms) shall be precisely simultaneous. If, however, we regard the matter after the fashion of naïve realism, and hold that a mental

process called perception knows a real object called a house, and that both perceptive process and house are included in the real time order of nature, we soon find a serious difficulty in our view. Professor Strong puts it thus: "The time needed for light rays to pass from the object to the eye and call forth the organic process to which perception corresponds has this result, that we perceive a slightly earlier state of the object than that which coexists with the perception." An extreme illustration is found in star vision, for "the starlight I see left the star years and years ago."[1] This tardiness of the perceptive state belongs universally to all perception of physical nature; the few thousandths of a second occupied by a nerve process in tactual perception are logically quite as significant as the thousands of years of light-transit in the case of a remote star. In any instance, whereas the object seems temporally present, reflection tells us that it is really past. The logical difficulty, in Professor McGilvary's words, is this: "The star that I see, therefore, must exist in the same state at two different times many years apart, if the star I see is the same as the real star in the order of nature."[2] This suggestion of inconsistency may appropriately be called the temporal paradox in perception.[3]

The importance of this fact for epistemology is considerable. If the inconsistency is genuine, it constitutes a final objection to an essential thesis of naïve realism, namely, that consciousness directly knows the real physical world as it is. And this, indeed, is precisely the use which Professor Strong makes of it. He says: "But the demonstrative proof that the object is other than the sensible appearance, is what may be called the *lateness* of perception. The sensible appearance is necessarily synchronous with the perceptive state, whereas the object (*i. e.*, that phase of it which is perceived) belongs to an earlier moment. Thus a star which we see in the sky may have ceased to exist ages and ages ago: a sufficient proof, surely, that what we now see (I mean the visual phenomenon—not that which the visual phenomenon reveals) is not the object itself." This conclusion applies, of course, to every bit of the physical world. It virtually tells us that we directly and immediately perceive only phenomena, that the real facts of the natural order are never immediately revealed in perception. Such information is so foreign to our naïve beliefs that we need a close examination of its premises.

The nub of the difficulty is contained in the assertion: "The

[1] This JOURNAL, Vol. I., p. 521.

[2] This JOURNAL, Vol. IV., p. 596.

[3] Professor McGilvary analyzes the problem and explains that, with proper qualification of statement, no genuine contradiction remains, but his discussion does not seem to convince Professor Strong, who restates the point in the James *Festschrift*, as quoted below.

sensible appearance is necessarily synchronous with the perceptive state, whereas the object . . . belongs to an earlier moment." The obvious ambiguity of the term "sensible appearance" here is troublesome. It does not mean identically "the perceptive state," for that would be simple tautology; nor does it mean "the real object," for Professor Strong explicitly distinguishes between the two. Does it mean the cognitive relation, separated abstractly from the (likewise abstracted) perceptive state? Apparently not, for it is referred to as "what we now see." It seems to indicate an *apparent object* not identical with the real object, or with the perceptive state, or with the relation between the two; and to say that this apparent object, whatever it may be, is of necessity strictly present in a *temporal* sense—that it is here right *now*. And it is the discrepancy between this implied presentness of the apparent object and the real pastness of the real object that constitutes the difficulty which, as Professor Strong sees it, prevents us from identifying the real object with the apparent object.

Now one might object, on empirical grounds, to the interposition into the perceptive process of such an apparent object which is not externally real, nor purely subjective, nor yet, strictly speaking, relational. But since the alleged discrepancy is between two time characters, present and past, let us go directly to the heart of the matter by asking, Does perception imply the temporally present existence of its apparent object? Introspect perception and see whether it involves objectively the feature of strict temporal presentness; or, indeed, whether it locates its object temporally at all. Some careful discrimination is needful here. What the writer seems to find in perception is a *presence* rather than a *presentness;* the object is pragmatically present-to-me, but is not perceived as occupying the strictly present moment in the time order of nature. This pragmatic presence has all the usefulness of temporal presentness (except in extraordinary cases), but the two are not obviously identical. The testimony of introspection is at least ambiguous, and there is ground for believing that we pass to the temporal judgment by an inferential process which is not logically implicit in the perception itself.

Perhaps, however, this empirical suggestion is misdirected, for what Professor Strong says is that the sensible appearance is "necessarily" synchronous with the perceptive state. Against this one may justly press a persistent *Why?* Unless we identify the terms "sensible appearance" and "perceptive state" in a tautology which is certainly not Professor Strong's meaning, it seems at least possible that we perceive the object *as it was*. Why, pray, would perception be any the less perception if we acknowledged that it is a relation

to the past? Only because of the very assumption which is here in question, namely, that the *presence* of the object is equivalent to its temporal *presentness*. To many, doubtless, it will seem that if the object is really past, all we now perceive is our mental image or phenomenon. But this, again, is an uncritical supposition rather than an observed fact or a logical necessity. From any point of view the "sensible appearance," or object-as-perceived, if it is not identical with the psychical state, may be really past. Provided the regular physical and physiological processes take place, *e. g.*, atmospheric waves, stimulation of end-organs, etc., we genuinely perceive the real object even though the past has swallowed it.

Upon this view the question whether the object now exists at the very instant of perception can be settled only pragmatically. In the fraction of a second occupied by a nerve current as well as in years of light-transit the object *may* have ceased to be. But this account of perception in no way changes the pragmatic presence of the perceived object. Only in cases where more precise temporal definition is needed would we correct the perception by reference to a mathematically exact "now." To some extent we are learning to do this with sound.[4] An interesting illustration, also, is furnished by observation of stars through a meridian telescope. The great difficulty of telling just when the star crosses the thread shows how uncertain is the simultaneity of sensible appearance and perceptive state, unless we identify the two *a priori*. In general, facts of change and motion are genuinely present-to-us in perception without being necessarily synchronous with the latter regarded abstractly as a mental state. Accordingly, if we understand the conditions of the problem sufficiently to escape being deceived by the "presence" of

[4] Professor Strong points to this fact as accepted confirmation of the distinction between sensible appearance and real object. He says: "We are habituated to the notion that a sound, for instance that of a distant whistle, is heard at a later moment than that at which its objective cause occurs—indeed, we see the escape of steam several instants before we hear the sound: we should apply the same analogy to vision. In both cases the perceptive experience can not be the object itself, but at most the object as perceived; it can not be the object *sensu stricto*, but only the content." ("Essays Philosophical and Psychological, in Honor of William James," p. 174.) Against this I would say: (1) as above, that the auditory experience does not as such locate the objective sound-as-perceived in the present, or temporally at all. Any temporal feature is extraneous to the perception as occurring. In the latter we simply *hear*. (2) It is not the mental "content" that we hear; the content is itself the hearing. Any psychological statement which divides consciousness into content and awareness, mutually exclusive, seems to me fallacious *ab initio*. "Content" and "auditory awareness" are two names for the same fact; the former refers to descriptive structure, the latter to function. (3) If we tenaciously hold to the point that it is the *hearing*, not an objective-content-heard, which is *now*, the time discrepancy vanishes.

all perceived objects, we see ground for a reasonable debate whether the alleged contradiction between present and past, as affecting the naïvely realistic "object," is genuine. The crux of the matter is the question as to the temporal location of the "sensible appearance" or "object-as-perceived." Since large philosophical differences turn upon this point, it deserves painstaking analysis and exact statement.

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DISCUSSION

HUMANISM AND FREEDOM

IN Dr. Schiller's "Studies in Humanism" is an interesting discussion of "Freedom," in which the author proposes a reconciliation of determinism and indeterminism. In the present paper, I wish to consider the nature and value of this reconciliation.

The problem arises, Dr. Schiller tells us, from the conflict between two great postulates—the scientific postulate of determinism and the ethical postulate of freedom. "The first demands that all events shall be conceived as fully determined by their antecedents, in order that they may be certainly calculable once these are known; the second demands that our actions shall be so conceived that the fulfillment of duty is possible in spite of all temptations, in order that man shall be responsible and an agent in the full sense of the term."[1] Now freedom, in the sense in which it is required by the ethical postulate, involves real alternatives. In order that it shall be possible, the universe must be really evolving, and the course of its evolution must be, in some degree, indeterminate. There must be moments, in the experience of every one of us, when either one of two opposed courses of action is really and completely possible.

To reconcile this conception of real alternatives with the postulate of determinism is Dr. Schiller's problem. Now all that determinism, as methodological postulate, requires of reality is a sufficient degree of calculability to make it worth while for us to continue to calculate the course of events. A conception of freedom which "allowed us to calculate the 'free' event" would, then, "be scientifically quite permissible." On the other hand, the moralist, with his demand for freedom, "has no direct objection to the calculableness of moral acts. . . . He would have as much reason as the determinist to deplore the irruption into moral conduct of acts of freedom, if they had to be conceived as destructive of the continuity of moral character: he

[1] "Studies in Humanism," 1907, p. 394.

would agree that if such acts occurred, they could only be regarded as the irresponsible freaks of insanity."[2] With these concessions secured from the two parties to the controversy, Dr. Schiller goes on to consider "our empirical consciousness" of freedom. On interrogating consciousness, we find that "free" choices are "comparatively rare events," that most of our decisions are "determined by habits and circumstances." We find, further, that even our "free" choices are not unlimited in their nature; we must always choose between certain more or less clearly defined alternatives. And finally, we see that, in order that there may be real choice, both alternatives must appeal to us, and hence must be connected with our characters. From this it follows that freedom represents a state intermediate between complete determination for good and complete determination for evil. It consists in the "indeterminateness of a character which is not yet fixed in its habits for good or evil, but still sensitive to the appeals of both."[3]

We are now ready for the theory that is to reconcile our two postulates. Since, in all real choice, each of the alternatives is connected with the character, it follows that, whichever one "is chosen, it will appear to be rationally connected with the antecedent circumstances." Hence it will always be possible, after the choice, to say that it resulted from the character and circumstances. What has happened will, then, always be intelligible; the error of the determinist is that he supposes that "because *it* was intelligible, no other course would have been."[4]

Here we have a conception of freedom which admits of the calculation of the "free" act, and which therefore meets the demands of science. Assuming the indetermination in a given case "to be real," we can "calculate the alternative courses to which it can be supposed to lead."[5] And while, from the nature of the case, we can not be sure that this possibility, rather than its alternative, will actually be realized, this uncertainty is precisely what we find in experience. In short, our theory provides for "far greater success in calculation than the deficiencies of our knowledge now actually concede to us."[6]

This is Dr. Schiller's proposed reconciliation. There are, it seems to me, three serious objections to it. The first is that, in spite of professions to the contrary, it really denies the continuity of moral character. Although, as we saw above, Dr. Schiller seems to believe that every deed, in order to be a moral action, must express the character of the agent, his proposed reconciliation really makes this con-

[2] *Op. cit.*, p. 399.
[3] *Ibid.*, pp. 401 ff.
[4] *Ibid.*, p. 404.
[5] *Ibid.*, p. 407.
[6] *Ibid.*, p. 405.

nection between the "free" act and character impossible. We are all agreed, I suppose, in saying that if there is to be choice, each alternative must appeal to me, and must, therefore, be more or less in harmony with my nature. But the question at once suggests itself, If both alternatives appeal to me, how is it that eventually I choose one rather than the other? The determinist would, of course, reply that in the actual moment of choice my nature is more in harmony with one alternative than with the other, and thus that the two do not, in this moment, appeal to me equally.[7] And for him who accepts this explanation, it would follow that in the moment of choice, the circumstances being what they were and my "nature then" being what it was, no other course could have been selected than the one which was actually chosen. Dr. Schiller maintains, however, that the opposite course could really have been adopted, and thus commits himself to the view that there are, in the moment of choice, two real alternatives. But this means, if it means anything, that there is no reason—no reason, even in my own nature—for my having chosen this alternative rather than the other. And to say that there is no reason for the choice, even in my own nature, is to say that my act is not the expression of my self, is to deny the continuity of character.

This point is so obvious, and has been urged so many times before, that it seems scarcely necessary to dwell long upon it. The continuity of character is preserved only if my deeds are the expression of that character, if they are what they are because it is what it is. Now it is quite true that my nature is, on the one hand, complex rather than simple, and, on the other hand, fluid or changing rather than rigid or static. Hence, it will follow that a certain act would express a certain aspect of my nature, and another quite different act, another aspect; or, again, that one act would express my "nature at a given time," and another act, my "nature at some other time." But while we freely admit that, for the most part, our characters are not fixed, but are only becoming more nearly fixed, it remains true that a deed, in order to be mine, must be an expression of my nature. Now, at the moment of choice, my nature is something definite. Whether my attitude at the time be one which is frequent with me or not, is aside from the question. It is at least real; and whatever is real, as Aristotle showed us long ago, has a definite nature. My self, at the moment of choice, then, is a particular self. And this particular self can not find its expression in *either one* of two opposed actions, which we call *a* and *b*, but only in one—let us say, *a*. If you declare, after the choice of *a*, that *b*, also, would have ex-

[7] This, which is the obvious deterministic answer, is also suggested by Mr. Barker, in his review of Dr. Schiller's book (*Philosophical Review*, Vol. XVII., p. 331).

pressed my self, this can mean only that *b* would have expressed some other self of mine, but not the self of that moment. But if you assert that *b*, although not expressing the self of that moment, was, none the less, really possible, you have simply denied the continuity of act with character. It is true that Dr. Schiller's theory does not reduce our life to a moral chaos, because most of our acts are still held to spring from character and circumstances. But in these "free" acts we have the introduction of an element which *tends* to produce moral chaos and would produce it but for the infrequency with which it appears. We find ourselves, then, in a dilemma. In order to satisfy the demand of our ethical nature—as Dr. Schiller interprets this demand—we are obliged to assume, in the case of certain actions, the existence of real alternatives; but this assumption carries with it the denial of the continuity of act with character, a denial which, as Dr. Schiller himself seems to recognize, is fatal to the belief in the morality of the action. The most natural reflection which the dilemma suggests is that we may be wrong in thinking that our moral nature requires us to believe in the existence of real alternatives.

My second objection to the "reconciliation" is concerned with a quite different point. An essential part of the theory is the suggestion that, after the choice, either one of the two really possible courses of action would seem to us to be rationally connected with the character. "*Ex post facto,*" we are told, "it will always be possible to argue" that "the actual course of events . . . is intelligible because it sprang from character and circumstances." But we must remember that "the alternative, had it been adopted, would have seemed equally intelligible, just because it was such as to be really entertained by the agent under the circumstances."[8] In speaking thus, it seems to me, Dr. Schiller overlooks the vital point of the matter. He assumes that the choices of men always, or almost always, seem to us in themselves intelligible, seem to have proceeded naturally from the characters. But the truth is that, in many cases, the action does *not* seem rationally connected with character and that, in spite of this fact, all of us insist upon believing it to be thus connected. Is not Dr. Schiller putting the cart before the horse? He speaks as if it were the seeming intelligibility of our actions, after they have occurred, which makes us declare that action springs from character, and that, therefore, only one alternative is possible. But the real movement of our thought—explicit, or more commonly, implicit—is quite different. We do not say: I see the connection of this act with the character; therefore I believe that it has proceeded from the character and that no other act, at this precise moment, could have proceeded from it. But we say rather: I believe that all action is

[8] *Op. cit.*, p. 404.

simply the expression of character, and hence, though I can not see it, I assume that there is a vital relation between this character and this choice.[9] Are we not, as a matter of fact, constantly reinterpreting character in the light of choices and thus constantly rectifying our judgments of the nature of other men and ourselves? The rational connection of all actions with character is our presupposition, or, if you like, our postulate; and we refuse to accept any interpretation which conflicts with it. When, therefore, an action surprises us, we attribute the apparent discrepancy, not to free will, but to our lack of complete knowledge of the agent.

My third objection has to do with Dr. Schiller's interpretation of the scientific postulate of determinism. It seems to me that his account of it fails to express its real motive. According to him, the fundamental motive is to be found in man's need of being able to predict. The assertion that every event is inevitably determined by its antecedent is simply the expression of our desire to calculate the future. This interpretation, I think, does not go to the root of the matter. We do indeed wish to calculate, we find it convenient to be able to predict; but deeper than this need, more fundamental than this desire,[10] are the desire and the need to understand. Science is not primarily the outcome of man's wish to calculate; it is the outcome of his wish to see the relations of things. The tendency to interpret the desire to know for the sake of knowing as a mere desire to know for the sake of some practical consequences,[11] is apparently deep-rooted in the pragmatists. Their critics have protested against it more than once; and latterly, some members of the school have seemed willing to admit the reality of the desire to know for the sake of knowing. But in Dr. Schiller's account of the postulate of determinism, we find the old tendency cropping out. That the fundamental postulate of science should be interpreted as essentially a desire to be able to calculate, and thus to satisfy our need for daily bread, is a striking illustration of the pragmatist tendency to overestimate the part which "practical" motives play in the life of the human spirit.

As I see it, the postulate of determinism is a demand that is made primarily in the interests of knowledge. Man has the desire to

[9] It is interesting to note that the only cases in which we insist upon *seeing* this relation are those in which the characters are artificial constructions. In the novel and the drama, we criticize the author if he fails to show us *how* a given person comes to make a certain choice. But in real life, when we are once convinced that a deed which surprises us was actually performed, we either reinterpret the character in the light of it or have recourse to the hypothesis of insanity.

[10] Deeper and more fundamental, *i. e.*, for science.

[11] Both here and a little below, I use "practical" in the narrowest sense of the word.

understand—as deep, as true, and as natural as the desire to eat. And we understand things better—or at least think that we do—if we are able to relate them one to another. The thing which we can not in the least understand is the one which seems to be out of all relation to what we believe ourselves to know. And the fundamental postulate of science is simply the demand that nothing shall be *really* out of all relation, that nothing shall be essentially unintelligible. Now if this interpretation be correct, it is futile for Dr. Schiller to say that a certain measure of calculability is all that science needs, and that his reconciliation, by making "free" acts in some degree calculable, satisfies all reasonable demands of our intellectual nature. Science is quite willing to admit that many things are at present unknowable and incalculable; it ought, I believe, to concede that many things are, in their very nature, incalculable;[12] but it is not, and ought not to be, willing to grant that there are parts of reality which are absolutely unrelated to the rest of it. We are ready enough to admit that there are events whose relation to the other parts of our experience we can not now see, perhaps may never be able to see; but to admit that they have no such relation is a different matter.[13]

These are my three objections to Dr. Schiller's "reconciliation." If space permitted, I should go on to show what seems to me the essential truth of the doctrine of determinism, and thus to define my own attitude toward it. But I must content myself with a very brief statement. That the assertion of "real possibilities" in human choice amounts to a denial of the continuity of act with character, and is, therefore, open to serious objections, both on intellectual and on moral grounds, seems to me obvious. On the other hand, I believe that human action can not be infallibly predicted, because every choice has a unique character. In order to predict, we must have a situation which is, in its essential respects, identical with some previous situation; and in everything worthy the name "choice" this

[12] This, it seems to me, is involved in the belief, which I myself hold, that time and change are fundamental aspects of reality, and that every choice is, strictly speaking, a unique event.

[13] We can not avoid the difficulty, as Dr. Schiller tries to do, by distinguishing between "methodological postulate" and "metaphysical dogma" (*op. cit.*, pp. 397 ff., 405 ff.). If all that science demanded were that it should be able to calculate, we might say, as Dr. Schiller does, that the requirement might be met, in considerable measure, even though its metaphysical basis—the belief in the interconnection of all parts of reality—could be shown to be false. But, as we have seen, science requires more than this. It demands that all parts of reality shall be conceived as interrelated; and this demand must fail of satisfaction if it can be shown that all parts of reality are *not* interrelated. Moreover, Dr. Schiller himself forces us to take the metaphysical point of view. For, as we have seen, the acceptance of his proposed reconciliation would involve the belief in choices which are unrelated to character, and thus in events that are not connected with the rest of reality.

sine qua non is wanting. I may add, further, that my theory does not carry with it a belief in the timelessness of ultimate reality. I agree with Dr. Schiller in feeling that this belief robs human action of its deepest significance. But I think that it would be a mistake to suppose that there is no middle ground between the doctrine of "real alternatives" and the doctrine of the unchangeableness of reality.

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REVIEWS AND ABSTRACTS OF LITERATURE

Mind in the Making. E. J. SWIFT. New York: Chas. Scribner's Sons. 1908. Pp. 329.

Most of the material of the volume consists of papers previously published separately in leading scientific and semipopular journals. In each chapter directly or indirectly the author deprecates the fact that educational efforts have largely tended to "submerge the individual." The intricate machinery of American school systems, together with the influence upon our higher institutions of German university methods, has obscured the chief function of education. Educators have increasingly lost sight of positive individual and racial assets, and as a consequence they have in most part adopted standards which distort rather than measure normal development. On the other hand, negative assets, seen, if at all, also from a distorted angle, have not been judiciously curbed and repressed.

In Chapter I. the author discusses "Standards of Human Power." After an exhaustive appeal to biographical literature, the conclusion is reached that the schoolmaster has signally failed in discovering the geniuses in his charge, has accepted too readily the verdict of school studies, has presupposed that he possesses some universal standard, and has on the whole used up "much energy in keeping children of widely varying endowments in the scholastic trail."

The keynote of Chapter II., on "Criminal Tendencies of Boys; Their Cause and Function," is that ideas of sin evolved with social evolution, that morality is a growth, that psychic recapitulation, as well as physical, is a fact. Material gathered by the author from a questionnaire sent to teachers, professors, college students, lawyers, ministers, dentists, merchants, etc., appears to reveal the fact that this early "obedience to racial instincts" by boys indicates the inevitableness and the naturalness of larks, adventures, truancy, fights, thefts of all sorts, and various other miscellaneous escapades formerly denounced as sins. The author further supports the conviction by copious anthropological and biographical citations. In the history of society, piracy, even theft and cannibalism, once ranked high. So in individual life every normal boy must resist or succumb to these "reverberations of savage life." All semi-criminal acts of

boyhood indicate how "deeply impressed in the organism are those of racial instincts." Their existence should not disturb us. The critical points are that development should never be arrested at these lower stages and that we should realize the preponderating influence of environment,—the Elmira Reformatory records indicating that about eighty-five per cent. of the inmates make respectable, self-supporting men. Their offense record began with those tendencies above noted.

As to the "School and the Individual" treated of in Chapter III., the author thinks that we "set up a psychical operating-table in every schoolroom, and proceed to cut each child according to our measure, forgetful of our own deficiencies, lopping off one individual trait after another, until we have made him commonplace enough to fit into the traditional pedagogical mold." The non-conformists, the gifted, won't fit into the system, they are objectionable, and biography again shows us that the school has not performed this individual-making function. The native tendencies which promote intellectual and moral growth are not, thinks the author, aroused by the pedagogical brand of interest in disagreeable work. "The effective line of approach to children is through their racial instincts and individual dispositions."

Chapter IV. is concerned with "Reflex Neuroses and their Relation to Development," nervous irritants which disturb and pervert mental growth. "The school age is the nascent period of the nervous system." Most paths are formed, some are not yet functionally active, none fixed or accustomed to facile and economic response. Waste energy at this period must interfere with cerebral organization and structural growth. The beginnings of nervous affection are not easily detected. Recourse to numerous medical records shows that "one of the most frequent sources of reflex neuroses is the eyes." Eye-strain is a common cause of central disturbances. Choreic symptoms often develop, epilepsy not infrequently results. Indeed, uncorrected ocular defects may result in almost any pathological organic disease, affecting even the moral nature of the patient. Some cases are particularly difficult to diagnose because acuity of vision is often not interfered with. Adenoids, also, should be considered as a prevalent cause for similar reflex disorders. Here pupils do brain work under diseased conditions. "Teachers should know the part that reflex neuroses play in mental hygiene, and in their preparatory training they should learn to recognize the indications of these affections in order that the nervous irritation may be relieved before it becomes a serious menace to brain growth and mental development."

"Some Nervous Disturbances of Development" (Chapter V.) must be carefully watched in children after their seventh or eighth year. Developing organs, rudimentary cells, and association paths can not easily resist disease or the "inroad of bad heredity." Though the periods for different cerebral developments are unknown, there must be critical times of arrested growth and stages when functional disturbances result in functional derangements. Chorea, a child's disease, should be watched. Incoordination of voluntary movements, temperamental changes, etc., are common and suggestive symptoms. Other disorders of this period of

growth whose natures are less known are tic, migraine, hysteria, and epilepsy. "Half an hour's observation of pupils at their school work will convince one skilled in interpreting nerve signs that these maladies have become so common as to menace our national health." Signs of precocity in children should also be looked upon with suspicion. Education is not merely an intellectual process. "The important thing is to detect disease in its incipiency, and this can be done only by those who are in daily association with children. The study of the usual signs of approaching nervous disorders should be a part of the training of teachers. . . ."

Problems in "The Psychology of Learning" (topic of Chapter VI.) are closely related to those of mental development in general. Swift discusses here results of his investigations into the learning process. Three types of skill-acquisition are described and discussed; the acquisition of purely muscular skill (keeping two balls going with one hand, catching and throwing one while the other is in the air); the acquisition of physical and mental skill combined (typewriting); and pure mental acquisition (beginning a language). Of the first type, results were that rate of acquisition was at first slow, then more rapid. The progress was by jumps, automatization appearing in the whole process, with different approximate levels of skill for different stages. Physical condition and waning interest affected the rate of acquisition. Slow progress, however, was only apparent, due to chance emergencies arising in various unexpected situations. Possible changes of interest came with the varying aspects of the task which called for new attitudes from the learner. This learning process furthermore disclosed, just before new adjustments to the obstacles encountered were devised, a physiological limit of attainment. At such point suggestion could speed the process. These new adaptations also were unconsciously adopted at first, introspection merely revealing that they had been acquired. In this complex process, finally, cooperating movements appeared to have improved separately before coordination was accomplished. Left-hand training from the first day in all cases showed a higher degree of skill than the preliminary test revealed, never dropping to that level. These left-hand curves also ascend more rapidly. In all cases right-hand training affected left. The author concludes: "There is no evidence to show that training has general value. Indeed, it all argues strongly for the influence of content. . . . Skill in certain lines may be serviceable in other similar processes, but its value decreases as the difference between the kinds of work increases, and in many cases it is probably reduced to zero."

This report is followed by very interestingly described investigations of the author relating to the similar activities and principles involved in acquiring typewriting skill and in learning Russian. The comments are illustrated by curves showing rate of progress. The common properties of all types of curves in these investigations appear to be that the physical condition is most important (the latest acquisitions, most critical for progress in learning, feeling decidedly the effects of lowered physical tone); that jumps with stops are inevitable characteristics; that sudden advance is a precursor of possible permanent acquisition; that the "no-

progress" periods occupy the greater portion of the time for the process; and that, contrary to other authors, higher and lower orders of habit develop simultaneously. In school, however, these inevitable plateau levels are "unnecessarily increased in number and depressingly prolonged by the rapidity and looseness with which past work has been gone over." These periods, further, should indicate a critical time when "the subject-matter should be reconstructed and reorganized, so that the automatization may not be too mechanical and stereotyped." Since these periods for different pupils can not coincide, "the disadvantage of class examinations is obvious." Monotony being an unavoidable obstacle in all learning, often prolonging too far these periods, diversity of material and method in indicating new phases for attention to be fixed upon becomes a demonstrable psychological necessity. Since, also, there is always the "subconscious utilization of experience," the author further suggests that "the value of constructive play as a factor in development is an unworked educational mine." This "utilization of experience may be accounted for by the organic friction that accompanies unsuccessful reactions." Further, these investigators seemed to furnish evidence that fatigue is "disastrous to the finer acquisitions which characterize growth in skill and knowledge." It is not practise, but successful practise, that counts for progress, sensitive incipient habits being easily deranged. The time element is likewise important, and no amount of work can make the learning process continuous, nor do equal amounts of work produce equivalent results. These plateau periods, after all, the stage when real progress is made, are critically important, and any attempt to shorten the process artificially, as is so often done in classroom work, is almost certain to bring disaster.

Of the "Racial Brain and Education" (Chapter VII.) Swift, reviewing various theories of the evolutionary stages of nerve development, concludes that "education from the physiological side seems to consist in conserving and elaborating the centers for nervous energy and in opening new paths of discharge." Somehow the organization of nervous centers and the ramification of fibers make possible the varying responses of the organism to similar stimuli. Facts significant for education are that in childhood the middle cortical layer is deficient in association-fibers and that growth or medullation of these fibers continues longer than was formerly supposed, perhaps beyond forty years, and that nutritional disturbances interfere with their development. If brain training can not increase the number of cells, collaterals may be increased and associational reach may be enlarged. Other standard investigations, the author thinks, support the view that numerous additional developments upon which mental power may depend, are clearly possible. "Other things being equal, the greater the number of intercellular connections, the greater the intellectual power, and it is beyond question that these intercellular connections increase according to the demand for them in the environment," the development of nerve elements depending upon the opportunity to function. "A rightly ordered system of education must grow out of the physiological requirements of the nervous system. . . .

Spontaneous and reflex movements produced through the discharge of lower centers precede conscious movement," and constitute the foundation for consciousness. Willed action is only thus built into the system. Swift thinks that educationists generally fail to recognize this, and attempt to develop higher centers without regard to the lower. The guiding maxim shall not be that mental efficiency depends upon amount of nervous energy available or exerted, but rather, that it is a "matter of nervous reciprocity, of coordinated impressionability and action." The intellectual helplessness of high school pupils and college students is evidence of the failure of our tutelary method of education to create habits of control of nervous discharge.

As to "Experimental Pedagogy," the discussion in Chapter VIII., the author laments the scant courtesy given it in education. He reports here, also, upon investigations in the Yeatman High School, at St. Louis, upon rates of the learning of pupils, some with and some without foreign language training, as they acquired knowledge of Spanish. Similarities to the principles of the above reported studies in acquisition were noted, and the practicability of his scientific method for actual schoolroom application is demonstrated. Upon a vital and critical step in university extension, he comments thus: "Experimental schools should be established by them, the aim of which should be to solve educational questions that lend themselves to the experimental method, and there are many problems of that nature." Such subjects as the minimum difference of ability may be thus tested. Swift illustrates this by a statistical study of the records of army and navy students. Wide differences shown here indicate even wider ones in elementary and secondary education, and make experimental investigation imperative. Certainly in most subjects the logical order of sequence of studies, too, is not the pedagogical, and the latter should be carefully tested experimentally for such subjects as grammar, language, arithmetic, etc. Such work, qualitative as well as quantitative, furthermore, aside from definite and immediate results, would enable teachers and students to face more squarely the conditions of the situation under discussion—a desideratum keenly felt by those who follow most detached and fragmentary educational experiments. Various sorts of future possible lines of development in scientific pedagogy are discussed.

From the same point of view the author makes a rather vigorous onslaught upon "School-Mastering Education" (Chapter IX.), concluding that material of school studies and method are not chosen from the learner as a starting-point. Nascent periods are ignored, and "instead of utilizing these flashes of racial life to kindle a natural enthusiasm, the schools have tried to create a superstitious interest," imposing upon the child the logical fetish of the adult way of conceiving. Supervision is largely responsible for this mechanized instruction. Low salaries for teachers afford another obstacle. Our industrial system is likewise antagonistic to the above ideal. Some larger conception of education must prevail, for "education is not school-mastering." To this larger conception Swift devotes his concluding chapter, "Man's Educational

Reconstruction of Nature." Here he contrasts types of reaction to immediate and to remote or ideal environment. The intellectual difference between man and lower animals consists in "the difference between associative reasoning . . . and inference in which the connection is obscured, by time or space, or by the complexity of the elements involved." Man's *versus* the animal's environment stretches beyond physical bounds and embraces the universe. To-day we must, hence, educate for an essentially new universe. Human evolution is not merely biological. This indicates that while "man has largely inherited the animal method and only partially adopted the human," his increasing social responsibility consists in enlarging and keeping plastic the socially reconstructed environment, which is the law of life. For this reason education should see and prize the importance of variation in human society. "The function of education here is to develop a mental attitude that is friendly to variation, and to train to rightly see and interpret relations." Information alone, too much relied upon heretofore, has not fitted us and alone can not fit us, for modern complex social adjustments. Reconstruction of society now going on is profound social variation. Education must foresee and prepare youths for this, and cease to be "engrossed in the comparatively petty rôle of teaching lessons." Variation does not mean destruction, but, instead, it serves to suggest a means for the progressive guidance of nature's selection.

Swift's book is stimulating, clearly written, interesting, and within the comprehension of the average reader. Its separate topics afford convenient references for students of education, although it is to be regretted that there is no subject index. On the whole it is a commendable attempt to state education in socio-psychological terms.

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Voltaire philosophe. GEORGES PELLISSIER. Paris: Armand Colin. 1908. Pp. iii + 304.

A book signed by Georges Pellissier is always worth studying carefully. Sober, clear, conscientious, more than any other modern French critic, Pellissier may be relied upon to provide both substantial and enjoyable reading.

These three hundred pages on "Voltaire philosophe" are a remarkable résumé, that will render in literature and philosophy an extremely valuable service. Voltaire is surely not an obscure writer, nor difficult to understand; but a book like the one under consideration fills its place; because, first, it is seldom that people will read him without being prejudiced either in favor of him or, more frequently, against him; and, secondly, because he has not by any means held the same opinions invariably, as is often thought; on the contrary, during his long career as a writer he has changed his views in several items, and those changes are important to know in order to reach an adequate appreciation of the thinker. Now, although many would like to do it, they can not afford the time to read through the more than forty large volumes of Voltaire's works; Pellissier

did it for them (see preface) in a careful and intelligent manner. He offers us an absolutely thorough book and up to the requirements of modern criticism and science: not one sentence that can not be traced to some very distinct passage; all the shades of thought carefully indicated; many contradictions pointed out and explained; finally, the whole book written in a style as clear as crystal, with not too many quotations, but yet enough of them to show how faithfully the exposition is made. The book is excellent.

There is one aspect of it, however, which I should like to consider briefly. Pellissier writes in his preface: "Nous n'avons point cru nécessaire de dissimuler notre sympathie pour un grand nombre des idées que Voltaire répandit par le monde. On verra qu'elle ne fait aucun tort à notre exactitude." It is perfectly true that Pellisier's sympathy "ne fait aucun tort à son exactitude." Still it will be wise at times if the reader keeps in mind the conscientious warning given by the author himself, and remembers that the latter chose Voltaire rather than any other great writer as a subject for his book in part, at least, because he specially liked Voltaire's attitude towards life. Of course, nobody can be absolutely impersonal and impartial when ideas, and not mere facts, are presented to the reader; no philosopher ever did it; and it would not be fair to ask the impossible from Pellissier. But, besides, the case of Voltaire is a peculiar one; he has always been considered as the representative *par excellence* of free thought, of rationalism, of hatred of superstition in all its forms. And as the antagonism between so-called conservatives and so-called progressists is always alive among men, Voltaire stands little chance any way to receive absolutely fair treatment. Moreover, we are all aware that France is just now passing through a period when Voltaire's name would be particularly apt to be taken as a sort of password for liberalism; therefore, if attention is devoted to him, it will not generally be the artist that will be studied, or his position in the history of French literature, or even in the history of human culture; the one Voltaire who appeals to us, either for the sake of admiration or for the sake of condemnation, will be precisely *Voltaire philosophe*. Thus, for those two reasons, it was to be expected that even had Pellissier not started on his book out of sympathy for Voltaire, he would hardly have escaped the fate of taking position in some way. And one who has followed Pellissier's publications in the last ten years knows of other circumstances which support the idea that, as a matter of fact, he pursued two distinct aims: to explain Voltaire, and to create a current of sympathy in the latter's behalf. The first publications of Pellissier were of a purely objective, or literary, character; let us recall here especially his conscientious and solid works—classic books among students of French literature—"Le mouvement littéraire au XIXe siècle" and "Le mouvement littéraire contemporain." Soon after came the period of trouble in France, when so many who had cultivated, as much as possible, up till then literature, art and philosophy from a standpoint above human passions, realized that no energy, no talent, could be wasted in the realm of pure thought when storm raged on earth. Pellissier did like the others, and when he came out shortly

after the events with a new collection of essays, he did not call them "Etudes de littérature contemporaine," as preceding volumes, but "Etudes de littérature et de morale contemporaine." Not only many allusions to recent occurrences were found all through the book, but in the two chief essays inserted—which had been delivered as public speeches—he contrasted two thinkers representing the two great parties in France at the time; and one of them was precisely Voltaire, who fought obscurantism and freed men from the bonds of many superstitions. "Voltaire philosophe" develops the same idea, only this time in a whole book. Pellissier is convinced that as an antidote to obscurantism and narrowness in all senses, atheism as well as bigotry, nothing is worth the lesson given by Voltaire over a century ago; nobody ever spoke so simply, and therefore so forcibly and so eloquently, the language of common sense and of toleration.

Several peculiarities of Pellissier's book that may strike the reader are readily explained when one keeps in mind the foregoing remarks. For instance, he attacks frequently modern critics who, in his mind, did not treat Voltaire fairly, Vinet, Brunetière, even Faguet. For one who simply wants to explain Voltaire's ideas, this is not especially called for; but one who claims that Voltaire is one from whom we should learn will naturally make attempts to correct wrong impressions which the public might gather from less sympathetic commentators (see *e. g.*, pp. 5, 6, 12, 209, 243, 254); in some cases there is not even disagreement of appreciation, but only a word that might convey a wrong idea is corrected (*e. g.*, pp. 209–210). Again, Pellissier discusses a good many really minor points, which only prejudiced persons (as those of our present generation) could misunderstand (*e. g.*, pp. 26, 110); this also betrays practical preoccupations. Finally, it seems that certain discussions which might harm Voltaire as a modern educator are avoided; for instance, his attitude towards Protestantism (pp. 101–104, 146, 229, 259). I am not prepared to maintain that Voltaire was *never* disinterested in his appeals to justice for the persecuted Huguenots, but I am inclined to think that the personal feeling of enjoyment in doing harm to his enemies, the Jesuits, plays a distinctly greater part than Pellissier allows. Voltaire tells us (*cf.* pp. 3–4, 90) that each year on the day of the anniversary of the St. Bartholomew's night he fell ill—well! it may true; still he grew very, very old!

The discussion of the personality of Voltaire, I agree, does not necessarily belong here; still when a man is proposed as a model for his moral ideas, we can not help inquiring a little bit whether he deserves our respect. Now I grieve to say that Voltaire does not. I do not allude to his private life. I do not, moreover, allude to the attacks recently renewed against him by Churton Collins, denouncing him as a spy in England—I believe those accusations are not true at all; but I refer to his cowardice as a man of letters, which we can not excuse. If a man wants to express ideas that will be criticized and that may bring upon him persecution, let him bear the consequences manfully. This Voltaire hardly ever did. The true Voltaire is in his correspondence which was not meant to become

public. Pellissier is too indulgent at times, whether he speaks (pp. 48–49, 94–99, 150, 257, 266–267) or whether he avoids to say anything.

Leaving aside the special purpose for which Pellissier drew his picture of Voltaire, let us ask a question: Does Voltaire, as a thinker, *Voltaire philosophe,* come out from Pellissier's book greater or smaller than we had him in mind? That he appears rather smaller is, of course, a merely personal opinion. When the writer first started reading the book, he said to himself: How is it possible to summarize Voltaire's philosophy within three hundred pages? And when he closed the book his idea was rather the reverse; namely, if one was to drop the detailed explanations, the minor points accidentally important because they may be made to apply to special circumstances of the present day, and the refutations of modern scholars discussing Voltaire, the book would be shorter, and still be perfectly fair to the whole *bagage philosophique* of Vlotaire. As a matter of fact, Voltaire has the ideas of a man of good sense to-day; good, common-sense ideas, but ideas which are not sufficient to solve any difficult problem of life. It would hardly be too much to say that if, by imagination, one were to remove Voltaire from the history of philosophy, not one original thought would be lost to humanity; he prepared the way for thinkers in popularizing useful, common-sense truths, but he has contributed none himself. What remains inimitable in Voltaire is the way he puts things, so clearly, so cleverly, so wittily: he is far greater by his art than by his ideas.

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Race Questions and other American Problems. JOSIAH ROYCE. New York: The Macmillan Co. 1908. Pp. 287.

The five essays in this volume were delivered as popular addresses before various audiences. As the author states in the preface, this volume is part of an effort to apply, to some of our American problems, that general doctrine about life which he has expounded at length in his book entitled "The Philosophy of Loyalty." He hopes that the various special opinions here expressed may be judged in the light of that philosophy. The present volume he regards as an auxiliary to its more systematic predecessor. This philosophy of loyalty is the practical aspect and expression of the author's idealistic philosophy. It is his answer to the pragmatist's protest that idealism is not a practical philosophy.

The closing essay of the present volume contains a summary of the theses upon which the philosophy of loyalty is based. The principle is stated thus: "*Be loyal, and be in such wise loyal that, whatever your own cause, you remain loyal to loyalty.* That is, so choose your cause, and so serve it, that, as a result of your activity, there shall be more of this common good of loyalty in the world than there would have been had you not lived and acted. Let your loyalty be such loyalty as helps your neighbor to be loyal. Despite the diversity of the individual causes—the families, countries, professions, friendships—to which you and your neighbor are loyal, so act that the devotion of each shall respect and aid the other's loyalty" (p. 248).

Everywhere that he has given an exposition of the new philosophy, both in this book and in his "Philosophy of Loyalty," Professor Royce is keenly aware of the fundamental criticism that will be offered to the doctrine of loyalty to loyalty. How is the first loyalty to which we are asked to be loyal determined? The author says: "But I freely admit that many men who have been enthusiastically and effectually loyal to various causes, and who in their personal lives have won as mature a notion of loyalty as they were capable of getting, have nevertheless often committed, in the name of loyalty, great crimes. And you may well ask how I explain this fact. You may well wonder how loyalty can be a central moral principle, when lives that were as loyal as the men in question knew how to make them have often been morally mischievous lives. My answer is that our loyalty leads us into moral error only in so far as we are indeed often blind to what the principle of loyalty actually means and requires. And such blindness is, as men go, human enough and common enough. The corrective to such errors, however, is not the introduction of some other moral principle than that of loyalty, but is just the discovery of the internal meaning, the true sense of the loyal principle itself. Whoever is loyal loves loyalty for its own sake" (p. 245).

The author makes the saving distinction for his doctrine between mere blind loyalty and enlightened loyalty. The former has done mischief in the past because it is pseudo-loyalty. It is turned into enlightened loyalty when it reaches the second dimension of loyalty, so to speak—the stage of loyalty to loyalty. The first commandment is: Be loyal. The second: Be loyal to loyalty. "That is, regard your neighbor's loyalty as something sacred. Do nothing to make him less loyal. Never despise him for his loyalty, however little you care for the cause he chooses. If your cause and his cause come into some inevitable conflict, so that you indeed have to contend with him, fight, if your loyalty requires you to do so; but in your bitterest warfare fight only against what the opponent does. Thwart his acts where he justly should be thwarted; but do all this in the very cause of loyalty itself, and never do anything to make your neighbor disloyal" (p. 253). From these consequences of his central principle follow all those propositions about the special duties of life which can be reasonably defined and defended. Justice, kindness, chivalry, charity—these are all of them forms of loyalty to loyalty.

In the first essay, on "Race Questions and Prejudices," Professor Royce finds the solution for our southern race problem by a study of the English solution of the once serious race question in Jamaica. The English have solved their problem by the simplest means in the world—by administration and reticence. "When once the sad period of emancipation and of subsequent occasional disorder was passed, the Englishman did in Jamaica what he has so often and so well done elsewhere. He organized his colony; he established good local courts, which gained by square treatment the confidence of the blacks. The judges of such courts were Englishmen. The English ruler also provided a good country constabulary, in which native blacks also found service, and in which they could exercise authority over other blacks. Black men, in other words,

were trained, under English management, of course, to police black men" (p. 22). Therefore Professor Royce concludes that "The southern race problem will never be relieved by speech or by practises such as increase irritation. It will be relieved when administration grows sufficiently effective, and when the negroes themselves get an increasingly responsible part in this administration in so far as it relates to their own race" (p. 29).

In the second essay, on "Provincialism," the author maintains that "in the present state of the world's civilization, and of the life of our own country, the time has come to emphasize, with new meaning and intensity, the positive value, the absolute necessity for our welfare, of a wholesome provincialism, the saving power to which the world in the near future will need more and more to appeal." The present state of civilization the world over is such as defines a new social mission which the province and not the nation as a whole can fulfill. "False sectionalism, which disunites, will indeed always remain as great an evil as ever it was. But the modern world has reached a point where it needs, more than ever before, the vigorous development of a highly organized provincial life. Such a life, if wisely guided, will not mean disloyalty to the nation; and it need not mean narrowness of spirit, nor yet the further development of jealousies between various communities. . . . But the two tendencies, the tendency toward national unity and that toward local independence of spirit, must henceforth grow together. They can not prosper apart. The national unity must not kill out, nor yet hinder, the provincial self-consciousness. The loyalty to the republic must not lessen the love and the local pride of the individual community. The man of the future must love his province more than he does to-day. His provincial customs and ideals must be more and not less highly developed, more and not less self-conscious, well established, and earnest" (pp. 64–66).

In the third essay, "On Certain Limitations of the Thoughtful Public in America," Professor Royce sees "mischief done by an unwise exaggeration of the tendency among Americans to reason, to argue, to trust to mere formulas, to seek for the all-solving word; in brief, to bring to consciousness what for a given individual ought to remain unconscious. . . . Thought, in any individual, must freely set limits to its own finite task. And when the thoughtful lovers of ideals forget this fact, they become mere wranglers, or doctrinaires, or pedants, or, on the other hand, in the end, through failure in thinking, they become cynics. . . . Now the human mind, in its present form of consciousness, is simply incapable of formulating all its practical devices under any one simple rule. . . . Restless search for the immediate presence of the ideal is often vain, like the pioneer idealism that burns the forests merely to see what they hide. Much of the best in human nature simply escapes our present definitions, is known only by its fruits, and prospers best in the forest shade of unconsciousness. . . . We are primarily creatures of instinct; and instinct is not merely the part of us that allies us with the lower animals. The highest in us is also based upon instinct, and only a portion of your instincts can ever be formulated. You will be able in this life to tell what they mean in only a few instances. But your life's best work will

depend upon all of your good instincts together. Hence a great part of your life's work will never become a matter of your own personal and private consciousness at all. It is one of the duties of the thoughtful lover of ideals, then, to know that he can not turn into conscious thinking all of his ideal activities" (pp. 152–153).

The fourth essay, "The Pacific Coast," will hardly interest students of philosophy as much as the others, although it contains a very suggestive psychological study of the relations of climate and civilization. Professor Royce's estimate of the civilization of the Pacific Coast is, in the opinion of the reviewer, himself a native and a long-time resident of the state, an entirely just one. Californians are noted for their "independence of judgment," "their carelessness about what the outside world may think of them," "their apparent freedom in choosing what manner of men they should be," their "confident and somewhat abrupt speech, particularly in speaking of the boundless future prosperity of their state." All these characteristics the author believes rest back, in large measure, on the peculiar climate and geographical isolation of the state.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. January, 1909. *Examen critique des systèmes classiques sur l'origine de la pensée religieuse* (1er article) (pp. 1–28): E. Durkheim. – A critical demonstration of the insufficiency of current naturism and animism as explanations of the origin of religious thought. *Comment fonctionne mon cerveau: essai de psychologie introspective* (pp. 29–40): H. Beaunis. – The most fruitful ideas come unsought and often develop themselves subconsciously. This subconscious work is done without fatigue. *L'analogie scientifique* (pp. 41–54): J. Sageret. – Scientific analogy gets its value from coexistent and related analogies, and scientific certainty surpasses analogy only in the weight of its associated analogies. *Observations et documents.* E. Goblot: *Un cas d'association latente. Revue générale.* F. Picavet: *Thomisme et philosophie médiévale (fin). Analyses et comptes rendus:* Le Dantec, *Science et conscience:* H. Daudin. Vialleton, *Un problème de l'évolution:* F. Le Dantec. Petrucci, *Essai sur une théorie de la vie:* H. Daudin. Manville, *Les découvertes modernes en physique:* Abel Rey. Bouty, *La vérité scientifiques: sa poursuite:* J. Sageret. P. Souriau, *Les conditions du bonheur:* Ossip Lourié. Bayet, *Les idées mortes:* Fr. Paulhan. Ch. Lalo, *L'esthétique expérimentale contemporaine:* L. Arréat. *Annales de l'institut international de sociologie:* J. Delvaille. Berthelot, *Évolutionisme et Platonisme:* G. H. Luquet. A. Riehl, *Der philosophische Kritizismus:* G. H. Luquet. *Revue des périodiques étrangers.*

Book, William Frederick. *The Psychology of Skill: with special reference to its acquisition in typewriting.* Missoula: University of Montana. 1908. Pp. 188.

Costin, William Wilberforce. *Introduction to the Genetic Treatment of the Faith-Consciousness in the Individual.* Baltimore: Williams & Wilkins Co. 1909. Pp. 45.

Gibson, W. R. Boyce. *God with Us: a study in religious idealism.* London: Adam & Charles Black. 1909. Pp. xix + 229.

Maugé, Francis. *Le Rationalisme comme hypothèse métodologique.* Paris: Felix Alcan. 1909. Pp. xii + 611.

O'Sullivan, John M. *Vergleich der Methoden Kants und Hegels auf Grund ihrer Behandlung der Kategorie der Quantität.* Berlin: Reuther & Reichard. 1908. Pp. vi + 129.

Prichard, H. A. *Kant's Theory of Knowledge.* Oxford: at the Clarendon Press. 1909. Pp. vi + 324.

NOTES AND NEWS

The following notice is quoted from *Nature* for February 11: "The *Physikalische Zeitschrift* for January 15 reproduces an address by Professor M. Planck to the science students at the University of Leyden on the unity of natural philosophy, in which he dealt mainly with the recent tendencies of theoretical physics, and pointed out how marked had been the absorption by electrodynamics of branches of the subject formerly distinct. In his own field of work he dwelt at length on the greater precision which had been introduced into the study of thermodynamics by the reduction by the late Professor Boltzmann of the idea of entropy to that of probability. From this, since the entropy of two independent systems is the sum of their separate entropies, while the probability of the two systems is the product of their separate probabilities, it follows that the entropy of a system is proportional to the logarithm of its probability. Finally, Professor Planck pointed out the directions in which future advances will be made, and predicted much discussion of these fundamental questions, for, as he said, 'theorists are many and paper is patient.' He pleaded above all for conscientiousness in self-criticism and avoidance of personalities in the controversies which must arise."

We have received the first number of the *Rivista di Filosofia Neo-Scolastica,* which will appear quarterly, each number containing 125–150 pages. The contents of the first number is as follows: 1. "Il nostro programma." 2. "Le iniziative della Rivista." 3. "Che cosa è la filosofia neo-scolastica?" Sentroul. 4. "Le potenze dell'anima esistono?" Rossignoli. 5. "La filosofia neo-scolastica nelle scienze sociali." Deploige. 6. "Sulla teoria somatica delle emozioni." Gemelli. 7. "Gli elementi di fatto per la soluzione del problema criteriologico fondamentale." Canella. Note e discussioni: 1. "L'opera del Liberatore dal 1840 al 1850." Masnovo. 2. "Con quali armi si difendono gli errori logici del Rosmini." Cevolani. 3. "La questione delle biblioteche pubbliche." Picozzi. Analisi di opere e note bibliografiche—Rivista delle Riviste—Notizie—

Opere ricevute dalla redazione. The review is published by the Libreria Editrice Fiorentina. Florence, Via del Corso 3.

Nature for February contains the following: "A curious instance of the light which may be thrown by anthropology on the system of Egyptian hieroglyphics is recorded by Mr. A. M. Blackman in the January issue of *Man*. The symbol representing the word *msy*, 'to give birth,' has been interpreted by Dr. Borchardt in the *Zeitschrift für Ägyptische Sprache* (December, 1907) to be derived from a fly-flap made of fox skins. Mr. Blackman has now found in Nubia that dead foxes are hung over the doors and on the roofs of houses as a charm to protect the women inmates from malignant influences at the time of childbirth. It follows, therefore, that the use of the symbol derived from a fly-flap was a secondary idea, the primitive conception on which it was based being its use as a birth amulet."

A WEALTH of new material, presumably of value to anthropologists, is contained in *Rerum Æthiopicorum: Scriptores editi a Seculo XVI. ad XIX.*, of which Vol. III. has just been published (Rome: C. de Luigi). The work is to be complete in four volumes and to contain the account of the work of the Portugese Manuel d'Almeida, who was at the head of the Jesuit mission in Abyssinia up to 1633.

THE Cambridge University Press will publish *Darwin and Modern Science*, a volume of essays prepared by a brilliant group of contributors. The volume is addressed not so much to the expert in science as to the layman who wishes to appreciate the range of Darwin's influence.

PROFESSOR LIGHTNER WITMER, of the University of Pennsylvania, is giving this term a course of lectures on psychology to the fourth year students of the Medical Department of the University.

THE French Congress of Scientific Societies will be held this year at Rennes. The subjects proposed for discussion include "the relations of sociology and anthropology."

CHARLES SCRIBNER'S SONS are about to publish a translation of Rudolph Eucken's *Problems of Human Life*.

SHELLEY'S translation of the *Banquet of Plato* has been republished by Houghton, Mifflin & Co.

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THE MIND WITHIN AND THE MIND WITHOUT

ACCOUNTS of mind differ characteristically according as they are based on the observation of mind in nature and society, or on introspection. What is said of mind by historians, sociologists, comparative psychologists, and among technical philosophers most notably by Plato and Aristotle, is based mainly, if not wholly, on general observation. Mind lies in the open field of experience; having its own typical form and mode of action, but, so far as knowledge of it is concerned, as generally accessible, as free to all comers as the motions of stars or the civilization of cities. On the other hand, what is said of mind by religious teachers, by human psychologists of the modern school, whether rational or empirical, and among technical philosophers by such writers as St. Augustine, Descartes, Berkeley, and Schopenhauer, is based on self-consciousness. The investigator generalizes the nature of mind from an exclusive examination of his own.

The results of these two modes of inquiry differ so strikingly as to appear almost irrelevant; and it is commonly inferred that mind can not be directly apprehended in both cases. It is assumed, furthermore, that one's own mind, or the mind at home, must be preferred as more genuine than the mind abroad. The conclusion follows that the latter is not mind at all, but a mere exterior of mind, serving only as a ground for inference. Thus we reach the widely popular view that mind is encased in a non-mental and impenetrable shell, within which it may cherish the secret of its own essence without ever being disturbed by inquisitive intruders. Now one might easily ask embarrassing questions. It is curious that, although its exterior is impenetrable, a mind gives such marked evidence of itself as to permit the safest inferences as to its presence within. It is curious, too, that such a mind should forever be making sallies into the neighborhood without being caught or followed back into its retreat. It must evidently be supplied with means of egress that bar ingress, with orifices of outlook that are closed to one who seeks to look in. But rather than urge these difficulties, I shall attempt to obviate them. This is possible only through a version of the two

minds, the mind within and the mind without, that shall prove them to be in reality one. They are not to be united by *calling* them one; whether, after the manner of parallelism, they are called the two sides of something not designated; or, after the manner of panpsychism, they are called the inside and the outside, respectively, of the other. To unite them it is necessary to replace them by the whole mind in which they appear plainly as parts; and to demonstrate mind, as one might demonstrate any other object whatsoever, in respect of its circumstantial cognitive access. The traditional shield looks concave on one side and convex on the other. That this should be so is entirely intelligible in view of the nature of the entire shield and the several ways in which it may be sensibly approached. The whole shield may be known from either side when the initial bias is overcome. Similarly I propose to describe the mind within and the mind without as parts of mind, either of which may assume prominence according to the cognitive starting-point; the whole mind by implication lying in the general field of experience where every initial one-sidedness may be overcome.

1. *The Mind Within.*—It has long been recognized that mind as introspectively viewed consists primarily in unorganized content. If I seek within for my soul, my search is baffled because I find variety instead of unity, and states instead of substance. The content thus discovered is also baffling because it is so largely indistinguishable from what I have already attributed to the common world, the other-than-mind. So far as I can clearly specify, even to myself, what I find within, it is such as *sensation of hardness, idea of Jerusalem,* etc., where *hardness* and *Jerusalem* have already been attributed to the physical adamant and the biblical Holy Land, and where *sensation* and *idea* as yet signify nothing more than the fact that the content is found introspectively. But although distributively they belong to various quarters of the other-than-mind, when assembled and inspected these data present a character that is genuinely anomalous. As respects the other-than-mental objects to which distributively they belong, they are one-sided and abridged; and as respects their mutual relations, they are peculiarly casual and even incongruous. My idea of Jerusalem does not embrace all of Jerusalem, nor does it grow more complete, as is the case when I have direct cognitive dealings with that object; and the within-my-mind relation between Jerusalem and hardness is in the highest degree arbitrary—the horizontal cross-relation failing to bring them into any sort of natural, moral, or logical relevance. In short, by introspection I find *a chaotic manifold of fragments of the other-than-mind.*

Now is there anything in the nature of introspection that will serve to account for such a result? Introspection, as I have in an

earlier paper attempted to point out, consists essentially in a mind's remarking what it knows.[1] Where memory is called into play, objects already known are *re*-known, and thus counted; where introspection accompanies the original experience, or knowledge of first intent, the objects are counted *as* they are known. In either case, introspection, like the knowledge of first intent, *deals with objects,* adding only the bare inductive grouping of them as objects known. For this reason it is possible for introspection to consist in little more than the recovery or arrest of experience. It tends to be distributive, and so useless because merely repetitive. But it is possible, as we have just seen, that the mind should remark its content in the aggregate, and thus discover a manifold that does not wholly coincide with the not-mind. The differences may now be at least partially understood. Introspection arbitrarily interrupts knowledge of first intent, and the content which it calls into view is, therefore, fragmentary so far as the object is concerned. And when introspection collects and assembles such fragments, there results a group the elements of which are merely together. So far as the elements are discrete, that is, separated by introspective analysis, this loose relation displaces for the moment such dynamic or other proper relations as subsist within the object-manifold. I refer here not to the so-called "transitive relations," which, if I mistake not, are experiences of common objective relations such as difference, propinquity, etc. I refer to the specific relation expressed by the term *and,* when introspection discovers as content *a and b and c,* etc., where *a, b,* and *c* may themselves be anything, even relations.

Now what light do such results throw on the nature of mind? It seems to me clear that they contribute only a preliminary induction. They doubtless afford unmistakable evidence of a special and important grouping of objects; but *they do not reveal the principle which defines the group.* It is admitted that the content of mind coincides distributively with, for example, the content of nature. It is important, then, to show how content of nature becomes content of mind. Natural objects do not enter wholly into mind. Then what determines their abridgment? An individual mind gathers into itself a characteristic assemblage of fragments of nature. Under what conditions does this occur? It is a common practise among contemporary writers, even among those who grant the distributive identity of mind and nature, to neglect this problem as insoluble or irrelevant. It is held to be sufficient merely to reiterate the fact that when the parts of nature lie together within mind they do not compose as they do within nature. But to make such a proposition important, not to say adequate, it is necessary to advance further.

[1] See "Mind's Familiarity with Itself," this JOURNAL, Vol. VI., No. 5.

For there remains the momentous fact that mind has both a natural origin and a natural habitat. The modification of nature that gives rise to mind, to mind on the whole and to each and every element of its content, takes place under natural auspices. Therefore it must be possible to follow the process of nature and *mark the modifying circumstances that define the mind-status taken on by certain of its parts.* And it is strange that this should be so largely ignored by philosophers, when it is, after all, so familiar a matter. It is popularly conceived that nature gets into mind at the moment when a physical organism, impelled by its interests and qualified by its capacities, is brought to notice it. By "notice" I mean no more than *act on* in the manner characteristic of any nervous organization. Such facts are, it is true, not introspective. But they should not be neglected on that account. It follows from what has been said that they are not only relevant, but sorely missed. The lack of them is the characteristic defect of the introspective method. It is possible, doubtless, to arrive at them in continuation of a study begun introspectively. Having assembled its content, a mind may proceed to compare it with nature and note its characteristic privation and incongruity. There might reasonably issue from such a comparison the conclusion that the inner manifold is selected by cerebral mechanisms functioning locally and obeying the interests of the organism. But such considerations are discontinuous with the introspective attitude; I am less likely to remark them with reference to my own mind than with reference to the mind of another.

To conclude, then, the mind within is evidently an incomplete experience of mind, containing in the foreground the mind's objects distributively or collectively regarded. The very incompleteness of this experience points to evidence neglected, evidence which is indispensable to the round knowledge of mind. That evidence, as will now appear more clearly, lies in the foreground when mind is an object of general observation.

2. *The Mind Without.*—As mind appears in nature and society, it consists primarily in behavior. The behavior characteristic of mind is promptly and almost unerringly distinguished by all save the most rudimentary intelligences. Indeed, the capacity of making such a distinction is one of the conditions of survival. Upon the lowest plane of social intercourse a mind is a potentiality of bodily contact, and is marked and dealt with accordingly. But even upon a comparatively low plane there is recognition of a characteristic difference between minds and other bodily things. Minds exhibit spontaneity and waywardness, a certain isolation of control. Individually they manifest persistent hostility, which is feared in them, or persistent friendliness, which is courted in them. Such a recognition of

mind is already present in a mind's discriminating reaction to anger, or to a hereditary foe, as denoting a marked or constant source of danger. Where social relations are more subtle and indirect, the element of interest tends to supplant the more mechanical element of mind. In my dealings with my neighbor I am most concerned with his desires or his consistent plan of action. I can injure him by checkmating his interests, or profit by him through combining my interests with his. It is most important for me to know what he consistently seeks. He is a living policy or purpose which I must apprehend if I would make either peace or war. Thus far, then, mind is a bodily complex moved by interests; having unity of control and consistency of action, in terms of self-seeking.

Now wherein lies the irrelevance of this account of mind to that based on introspection? Surely in the fact that, whereas in the introspective experience one at once encounters the objects of mind, in this account they are thus far wholly neglected. But they do not necessarily escape general observation. If I am to deal with my friend or enemy at close range, it is clear that I must think with him, or always to some extent traverse with him the objects in his field of view. Upon higher planes of intercourse, in narrative, in straightforward and companionable discussion, another's mind consists more of objects than anything else. Its bodily aspect falls away, and even its impelling interest tends to be neglected. But grant that as mind lies before one in nature and society its bodily and desiderative components are focal and its objects marginal. Even so, it needs only a shifting of the attention to correct the perspective. I may deliberately take pains to discover and supply a mind's objects. To do so I have only to observe what the mind selects from its environment. Is this not exactly what the student of the animal mind does? We are told, for example, that the amœba has four general reactions of the organic type. One of these is described as *positive:* "a pseudopodium is pushed forward in the direction of the stimulus, and the animal moves toward the solid." The solidity of bodies enters into this animal's practical economy: "the positive reaction is useful in securing contact with a support on which to creep."[2] Here is an element of the environment that is marked and isolated by a response which expresses the organism's self-preservative impulse. Do we, then, not know the content of the amœba's mind? Should I ever understand the matter better by contracting my own mind to amœba-like proportions? I grant that as I have loosely described the matter, much doubt exists as to how far the amœba's discrimination goes, but in his studies of sensory discrimination the comparative psychologist has himself devised methods which open the way to greater

[2] Washburn, "The Animal Mind," p. 40.

exactness.[3] Conditions may be contrived which make it to the animal's interest to notice differences, and these may be progressively refined until the animal is pressed to the limit of his sensibility. When after such tests the conclusion is reached that the animal *feels the solid* or *sees blue,* what remains to be said by way of "interpretation"? If we read too much into such a conclusion, we read it not from the experimental facts, but from that very introspective analogue which is being held in reserve as a means of translating the results from behavior into mind.[4] The amœba does not, it is true, feel the solid as we do. Therefore let us observe the amœba, and not undertake to say how we should feel if we were amœbæ. The environment, as it lies before us and as it is presented to the amœba, is distinguished by the *amœba's action,* wherever this is clearly marked.

There exists, I know, a general belief to the effect that mental content can never be known in this way. But this belief appears to me to be due to a curiously perverse habit of thought. It is customary to look for the object *within the body* and then solemnly declare that it is not to be found. Though long since theoretically discredited, the "subcutaneous" mind still haunts the imagination of every one who deals with this problem. Now why not look for the object where it belongs, and where it is easily accessible—namely, in the environment? Is it not in truth the environment which the amœba or any other organism is sensing? If, then, we are in search of content, why take so much pains to turn our backs on it, and look for it where by definition it must escape us? I eagerly await that "interpretation" with which the animal psychologist proposes to supply the animal mind with introspective content; but I expect to wait in vain. I believe that before such an interpretation is offered to the public it will be recognized by the investigator as only a muddled version of something which he has already formulated. Then how are we to account for this distinction between animal behavior, based on observation, and the animal mind, based on an introspective analogy which, since the discovery of exact methods in this branch of research, no one has had either the time or the will to carry out? It is due, I think, simply to a failure to group together *behavior and those elements of the environment selected by the*

[3] *Cf. op. cit.,* Ch. IV.

[4] I have reference here to such statements of method as the following: "Knowledge regarding the animal mind, like knowledge of human minds other than our own, must come by way of *inference from behavior.* Two fundamental questions then confront the comparative psychologist. First, by what method shall he find out how an animal behaves? Second, how shall he *interpret* the conscious aspect of that behavior?" (The italics are mine.) Washburn, "The Animal Mind," p. 4.

behavior, the reaction *and* the stimulus. It is true that neither behavior nor even conduct is mind; but only because mind *is* behavior, or conduct, *together with* the objects which these employ and isolate.

Precisely, then, as introspection obscures the instrumental and motive factors of mind, so general observation obscures its objective factor. And when these factors are united, they compose a whole mind, having a structure and a function that may be known by any knower, whatever his initial bias.

In conclusion let me briefly summarize the parts of mind which the analysis has revealed.

1. In the first place, a mind is a complex so organized as to proceed desideratively or interestedly. I mean here to indicate that character which distinguishes the living organism, having originally the instinct of self-preservation and acquiring in the course of its development a variety of special interests. I use the term *interest* primarily in its biological rather than in its psychological sense. Certain natural processes act consistently in such wise as to isolate, protect, and review themselves.

2. But such processes, interested in their general form, possess characteristic instrumentalities, notably a bodily nervous system which localizes the interest and conditions its intercourse with a physical environment.

3. Finally, a mind embraces certain objects, or parts of the environment, with which it deals in its own behalf.

The natural mind, or mind as here and now existing, is thus an organization possessing as distinguishable, but complementary, aspects, *interest, body,* and *objects.*

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THE EXISTENTIAL UNIVERSE OF DISCOURSE

IF things are to become objects of knowledge or the subject-matter of problems, they must at least reveal the fact that they exist. They must touch experience at some point, make a difference somewhere in the world that gets observed; if they do not, there is no clue anywhere to them, no possibility of knowing either what they are or that they are. Human judgments about existence must accordingly be directed upon a subject-matter which has been revealed within the horizon of human experience. The empirical world which has thus far been brought under observation includes the subject-matter of all problems about existence which can at present

arise, and all the evidence upon which the solutions of those problems can at present be based. This is a situation which defines the limits of the subject-matter of all existential judgments and all existential problems, and which functions, therefore, as a universe of discourse, as the ultimate universe of discourse for all judgments and inquiries concerning existence. It need hardly be pointed out that the universe of discourse which we use to-day has been gradually achieved. It represents the labor of many centuries, and we may trust that its content will be enriched and modified by the labor of many more. But the fact that there is a universe of discourse can not constitute a problem under that universe of discourse. There are many problems of astronomy, but the fact that there is the science of astronomy can not be an astronomical problem. Anthropology is particularly rich in problems, but the existence of their subject-matter can not be an anthropological problem. In general, the subject-matter of problems is the precondition of having problems about that subject-matter. And if, as I have maintained above, the subject-matter of every judgment which affirms existence must be something which has betrayed its existence in the only possible way, the fact that we have such a subject-matter, *i. e.*, that we have the necessary precondition of any inquiry into existence, can not be a problem in that inquiry. We can not go behind or beyond our ultimate existential universe of discourse; and to say that something has been observed is, accordingly, simply to say that it is a member of the universe of discourse above referred to, and *vice versa*. Given this membership, given, that is, its discovered existence, an object may become the subject-matter of problems, and knowledge of it may be accumulated; but the object must be discovered before it can be studied, and the fact that there is a subject-matter can not constitute a problem about that subject-matter. Of course the fact that there is the science of chemistry may generate a problem, but not a problem of chemistry. The fact that things are observed may generate a problem on condition that their universe of discourse can be referred to a more comprehensive existential one. If, however, an object must be discovered before it can become the subject-matter of speculation which concerns existence, we have already reached the ultimate universe of discourse in predicating of objects only that they are observed, discovered or perceived; which is no more than to say that there is an existential subject-matter, or that there is an existential universe of discourse.

The term "problem about existence" or "existential problem" may suggest an inquiry as to whether or not the subject-matter of the problem exists. And then to say that the subject-matter must reveal its own existence before it can become the subject-matter of an

existential problem, would contradict this meaning of the term. This line of criticism would be natural to many who were brought up on the problem of the "outer world." Here was a problem of which the subject-matter was apparently, The outer-world, does it exist? How, if its existence was revealed, should we have been in such dialectical straits about it? And yet, could its existence have been revealed any more clearly than it was? Nature seemed to be doing her part, while we did our best to baffle nature's excellent intentions. This digression is not so irrelevant as it may appear, for it is important to realize that existential discussions must start with existence and proceed to the investigation of that existence, following up whatever ramifications may be discovered. One reaches continually new starting-points and thus new subject-matter; but always our subject-matter must be the material we are investigating, and that would seem to be the existence we last started in to investigate, and not the existence we shall, with good fortune, arrive at. Thus, while an existential problem may be an inquiry whether something exists, it can never be an inquiry whether the subject-matter of the discussion exists.

However awkward the above statement of the case may be, the thing itself is extremely simple. It follows, however, that knowledge can not be defined in terms of perception. I do not know a thing when I perceive it unless I do more than perceive it. Knowledge of existence presumes and depends upon whatever existential universe of discourse we are provided with. The one at our disposal is, of course, widely different from the one men had to use before the middle of the fifteenth century; the alteration, however, has been brought about by the natural process of research and discovery, a process which there is no reason to suppose is going to cease in this generation or the next.

II.

Knowledge of existing things has to do, then, with members in the above-described universe of discourse. Without attempting a complete or a dialetical statement on this point, it can fairly be said that the kind of thing called knowledge is as conveniently provided for our inspection as any other kind of thing. Chemistry, biology, engineering, agriculture, astronomy, are bodies of knowledge that have been accumulated about portions of discovered existence. Such a formula as NaCl = salt signifies knowledge of a particularly important type, knowledge of the way determinate things combine to produce determinate results. If now the word knowledge is to be used to mean uniformly the same sort of thing, it ought to be illustrated as well by one specimen as by another; and the symbol NaCl is a convenient illustration.

Accordingly as we are interested in contemporaneous existence, or in relations of before and after, we can say salt = NaCl, or Na + Cl produce salt. I shall use the latter form of statement, for it is the genesis of results in time that is here kept in view, the way determinate things happen upon a basis of particular conditions. But what is going to happen has got to be learned by experience of the factors that enter into the situation. The potentialities in things are greater than appear on the surface; accordingly, it is natural for age to expatiate to youth on the capacities for good and evil which lie hidden in things, and which only experience can find out. Common sense thus distinguishes what we may call the inside and the outside of things. But common sense does not, like much philosophy, take one aspect and forget all about the other. Every one will understand what is meant if we call these two aspects "appearance" and "causality," or "immediacy" and "causality." The lesson that wisdom and maturity seek to instill into inexperience and youth is that things cooperate as factors to produce determinate results and that these results seem to have so little to do with the "appearance" of the factors which combine to produce them. If now we use the letters I and C to signify immediacy and causality, we can let I_{Na} stand for the immediacy of sodium and C_{Na} for the causality of sodium. We might then express by the symbol $I_{Na}C_{Na}$ what we mean by the word sodium. In the same way, the symbol Cl may be expanded to $I_{Cl}C_{Cl}$. And now substituting these analytic symbols for the usual ones of chemical notation, we can rewrite the formula for sodium chloride as follows: $I_{Na}C_{Na} + I_{Cl}C_{Cl}$ produce salt. All that has been done in the expanded formula is to exhibit the distinction between what was called above the inside and the outside of things, and to symbolize the two chemical elements sodium and chlorine as having an "inside" and an "outside." However, in the operation of these factors which results in the genesis of salt we are concerned only with their causality. In this efficacious relation, the immediacy of each of the causal factors is an irrelevant accretion, which can be therefore omitted from the formula, giving us $C_{Na} + C_{Cl}$ produce salt. The product NaCl has, however, its own immediacy, for the fact is not merely that something with a certain causality exists but that the thing in question has come under observation, *i. e.*, it has cooperated in generating a perception. If we let P stand for the organ of perception, I_P will signify its immediacy and C_P its causality or productivity or capacity for making differences. And now viewing our product salt as something having both causality and immediacy, we are able to write $C_{Na} + C_{Cl} + C_P$ produce salt; for, unless C_P enters into the factor combination, the product can not emerge into the existential universe of discourse. It must be understood that the

letter P stands for more than sense organ in the restricted physiological sense; it means the organ of apperception as well as of perception, and it signifies, accordingly, temperament, idiosyncrasy, and all the complexity of organization which contributes to the generation of experience, *i. e.*, to the generation of whatever product finally emerges. So much by way of preliminary illustration, using a simple formula from chemistry.

Let us now make the formula general, and write Y + Z + P produce X, in which X is any determinate product, whether thing or sensation; P, the organ of perception, and Y and Z, the causes cooperating with P to produce X. Omitting immediacy, we get $C_Y + C_Z + C_P$ produce X. X is the empirically total product and could be represented by $I_X C_X$ if there were any occasion to do so. The formula $C_Y + C_Z + C_P$ produce X symbolizes the way things are pregnant with determinate possibilities. It means that things go together in determinate ways to yield determinate results, that the results are unaffected by the immediacy attached to the causes, and that the results must make observable differences somewhere if there is to be any clue to their existence. Whatever may be true of things which have not cooperated with C_P, the things that can be objects of science or of any genuine reference have entered the universe of discourse by making some difference which organs of observation can detect. The fact that human judgments about existence have to be made under the control of this universe of discourse is what is meant by insistance upon experience and empirical evidence.

I have sought thus far to avoid raising the question whether or not things are transformed by the cooperation of C_P. Without the cooperation of C_P, there is no explanation of immediacy belonging to the product X. It may be said that no explanation is necessary. To say this is to say that $C_P = 0$ is a more natural assumption than $C_P > 0$, and that the demand for an explanation of the immediacy of X must itself be justified. Besides, to make such a demand seems very much like going back on the position thus far defended, that the world as observed and experienced is our ultimate existential universe of discourse. It is, however, not the present writer who raises the question. The interest in formulating a doctrine of realism that shall be both critical and reasonable is a sufficient motive for considering that " naïve realism " which holds that things when unperceived have the same complement of secondary qualities that they have when perceived. The naïve realist evidently asserts $C_P = 0$, in so far as we are concerned with genesis of anything characteristic of X. It is a question of empirical evidence, and the evidence is that C_P does contribute its quota to the product, and that the quota is the immediacy aspect without which there might be a uni-

verse, but no universe of discourse. In any case the evidence has to be gathered from a world that has been observed; that is, the naïve realist has to use the same universe of discourse as the empiricist. The world of observed and noted things, of physiology and experiment, is a world where the constitution of C_P does, apparently, make a difference. This universe of discourse can not possibly contain the information that another and less determinate class of things has the same immediacy characteristics as the class of experienced things. The question which the naïve realist attempts to answer would seem to be a logically futile one upon the assumption $C_P = 0$, which has to be made in order to save the reduplication of secondary qualities outside the empirical universe of discourse.

How does the case stand if we make the other assumption, $C_P > 0$? This assumption regards the organ of observation as a factor which really cooperates, not in determining "reality," but in determining experience. From this point of view, to ask what things are like outside of experience is like asking how a sonata sounds to a man totally deaf, or whether a man would pronounce French and German the more correctly if he had no organs of speech; it is to ask what is the content of a product when we deny the conditions necessary to generate the product. To write $C_P = 0$ is to say there is no experience. The naïve realist need not deny that. This is the first step in the idealistic argument, but the next step that thereby material existence disappears, can not be taken. To take again our formula $C_Y + C_Z + C_P = X$, it is evident that all that happens when C_P is eliminated is that the other factors are unable to reveal their existence. They do not thereby, however, cease to exist as conditions which, when the cooperation of C_p is obtained, will produce a determinate X. To say that we can not know things as they are because we must know them under the conditions of our universe of discourse, reveals a curious conception of "reality." It is like saying we can not hear the real music because we have to hear it. A thing is as real in one relation as in another. The factors C_Y and C_Z are not less real when they cooperate with C_P than when they do not. The product $X = I_X C_X$, is not less real than a product C_X, forbidden ever to reveal its presence. But to ask further concerning the factors that cooperate with C_P, to ask what they may be in addition to being conditions for the functional operation of C_P, is to ask an artificial question. The realist, the idealist, and the empiricist must all start with the same ultimate universe of discourse, the world with which we have thus far become acquainted. Whatever the "real universe" has been about, the universe of discourse has not stood still through the interval from Thales to Lord Kelvin. It has been a creature of distinctly radical habits and has

often enough brought shrill lamentation from its conservative custodians. A more unsatisfactory exponent of eternal verities can hardly be imagined.

III

The above considerations are not favorable to "naïve realism," using that term in the sense above indicated. They should, however, encourage a type of realism characterized by a scientific temper and a spirit of this-worldliness. For after all, "naïve realism" is a kind of other-worldliness. The realist of the type here advocated will work within the limits of his natural universe of discourse. It is a pity that he must be called a realist, for such terms have meaning only in the setting of polemical alternatives which express issues that are as good as dead. Such a "realist" who pursues inquiries about existence will ask his questions and frame his answers in terms of his empirical subject-matter. What does the problem of perception[1] now become? There is no longer any meaning in such a phrase as "the problem of perception." Perception is one of the processes in the natural world and its investigation is like the investigation of any other natural process. There must be various problems of perception as there are various problems of digestion. What those problems are depends upon the progress already made, the resources for investigation, and the difficulties encountered. The problems of perception will be inquiries into the operations of natural factors, and the solutions of those problems will be the discovery of how the things in question go together. The knowledge thus obtained will be a case of the type of thing symbolized by the expression "Na + Cl produce salt." If now we recognize that the world of our acquaintance contains the subject-matter of all inquiry about existence and all the evidence with which to meet the demands of such inquiry, we seem entitled to say that experience is the ultimate existential universe of discourse. The term experience does not here mean anything different from empirical fact. It is the content of X generated by C_Y, C_Z, and C_P in combination. Experience may not be an altogether satisfactory name for that product, but there is no particular reason why it should not be understood, even by those who devote themselves to the confusion of pragmatists.

But why, then, use the word experience if we mean the empirical aggregate thus far envisaged? I wish a better word were available, but it should be a word that would keep us reminded that the subject-matter of existential theory is apperceived as well as perceived, and

[1] I may refer here to the article "Perception and Epistemology" by Professor F. J. E. Woodbridge in "Essays Philosophical and Psychological in Honor of William James" for such an account of this question as would be here in place.

that the apperceptive factors included in the reference of C_P influence in a very decisive way the judgments of philosophy. These judgments often lead to new perceptions and modify existing apperceptions, and so the existential universe of discourse grows. In generating the subject-matter of human judgments, the human factor plays a part that can not be overlooked.

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DISCUSSION

MOTOR PROCESSES AND MENTAL UNITY

IN Professor Judd's interesting article on "Motor Processes and Consciousness" in the issue of this JOURNAL for February 18, he sets forth his own view with a contrasting background of earlier theories which make use of "motor processes." He speaks of Dewey (1896) and McDougal (1898) as "among the first writers to emphasize the importance of motor processes as general conditions of consciousness"; but says they fail to apply the theory to specific cases. On the other hand, Münsterberg, Royce, and I are cited as dealing with specific cases (the case of the "general idea" being that selected in my own instance), and as not giving an account of the "relation of all motor processes to consciousness"; our "formulas are not comprehensive enough." The theory of Professor Judd, on the contrary, repairs these defects in both directions: he accounts for mental "organization" of all kinds, with the resulting "unity," in terms of motor processes, and also applies it to specific cases, such as recognition of particular degrees of unity, of "likeness," etc.

It is not, then, a question of the details of any theory of either the general or specific operations of the motor processes, that Professor Judd speaks of, but the question of the utilization of such processes *for purposes* of theory, either of general or of specific organization in consciousness. This gives his points a certain vagueness; but at the same time it makes his restrictions more comprehensive and decided, for all the writers cited. Have I, for one, not announced a general motor theory of mental organization and unity, and not applied it to other specific cases than just the one Professor Judd attributes to me?

Speaking only for myself, I may say that his allusion to my position is, in respect to the one problem to which he limits it, in a large sense correct, but that the limitations he sets upon it are altogether incorrect; and this bears upon the two matters in which Professor

Judd finds his own views in advance of those of the other writers named. I have gone into the questions of mental organization and recognition of unity through motor processes, both in general and in reference to particular cases, with results in many respects similar to those of Professor Judd, as he recognizes for the one case of the "general idea." The views (1) that mental organization and unity are always motor in character, and (2) that recognition both of the "general" and of all other sorts of objects, percepts, or ideas, is due to distinctive motor processes, are points explicitly taught in my book "Mental Development" (first edition, March,[1] 1895: the quotations that follow being from that edition). Further, (3) these are only instances of very varied specific applications made in my books. To wit: "The assimilation of any one element (of content) to another, or the assimilation of any two or more such elements to a third, is due to the unifying of their motor discharges in the single larger discharge, which stands for the apperceived result" (p. 309). All associations of ideas are explained in the context of this passage as cases of relative assimilation, due to "synergy" of motor processes. "Among these elements (motor), the attention strains are of the first importance: they constitute largely the sense of activity in mental synthesis or apperception everywhere"[2] (pp. 309–10).

Again, as to perception, which Professor Judd very rightly emphasizes—"All perception is a case of (such) assimilation. The motor contribution to each presented object is just beginning to be recognized" (This in 1895: it is illustrated by cases of "apraxia," etc.): in apraxia, "the central link by which the object is made complete, the synthesis which made the whole complex content a thing for recognition and for use, this is gone" (pp. 311–12).

As to the employment of this for consciousness generally—a thing which Professor Judd also rightly values; "Every two elements whatever, connected in consciousness, are so only *because they have motor effects in common*" (italics in the original, p. 315). "In recognition, they have so much in common that they are presented as one" (p. 315). In the same connection an analysis of attention is made which distinguishes the motor processes for individual recognition from those of "class-recognition" or "generalization," the

[1] And summarized still earlier in an article in *Mind*, January, 1894. (See "Fragments in Philosophy and Science," especially, pp. 181 ff.)

[2] Professor James recognizes and quite adequately describes my view as the "synergy" theory of unity in his Princeton address, "The Knowing of Things Together" (see *Psychological Review*, II., 1895, p. 118). As to the actual working of the interaction of sensory and motor factors as a universal thing, it is discussed in the section on "Sensori-Motor Association," "Mental Development," Chapter XV., No. 3.

latter proceeding upon the differences of motor processes of the different senses.

As to unity and identity: "the mental demand for identity is really *a demand, i. e.,* a tendency to *act in one way upon a variety of experiences*" (italics in the original, p. 323).[3] In the chapter in which the motor theory of generalization is developed, that theory is not limited to one application, as Professor Judd supposes; the following summary from p. 329 is to the point: "Apperception is genetically the simple fact of motor habit, with the assimilations and associations to which it gives rise. Motor habit is the great devouring thing that throws its arms around all mental details and unifies them in its embrace. The most refined and subtle forms of it take place in the attention. Attention supplies the form to every content. Attention, representing as it does the most refined forms of motor reaction upon revived mental content, its adjustments are the medium of conception, thought, reasoning, of all possible groupings and arrangings in the mind. Thought exhibits, therefore, a new stage in motor accommodation. It shows the organism's adjustments to the relationships of truth, as memory, perception, sensation show its adjustments to those of fact."

Many such passages might be cited, showing the application of the theory to specific cases;[4] but it is not necessary; for the whole book ("Mental Development") is so saturated with the motor theory, both in general and in its detailed applications, that it stands

[3] Cf. Judd, article cited, p. 89.

[4] As to other specific instances: in my address on "Selective Thinking" (*Psychological Review*, January, 1898), reprinted in "Development and Evolution," the motor theory is applied to "selective thinking," or "the systematic determination of contents as true" ("Movements it is which, by their synergy or union, give unity and organization to the mental life," "Development and Evolution," p. 248; "novelty, variety, detail of experience, can be organized in the mental life only in so far as it can be accommodated to by action; if this can not take place, it must remain a brute and unmeaning shock, however oft-repeated the experience may be," *ibid.*, p. 249). See also "Social and Ethical Interpretations," 1897, chapter III., 3. In the work "Thought and Things," Vol. I., chapter III., the construction of the simplest mental objects is shown to be due to the development of special interests and dispositions fundamentally motor in character; and in Vol. II. of the same work, theories are worked out in which contradiction and negation, as well as identity and consistency, are considered as meanings possible only through variations in motor organization and inhibition. So, too, in the same work, the "inner control" factor which constitutes the "self," is found to be a segregation of motor tendencies and dispositions; while the "individuation" of objects, at every stage of mental development—the treatment of contents as *in any sense* individual units, with the concepts of unity, plurality, group, etc.—is found to involve fundamental motor organization. Surely, no lack of *attempts*, at any rate, to work out specific cases!

out almost in every section. I have no interest in calling attention to this save that of being accurately represented. Indeed, when Professor Judd's excellent "Psychology" came out, a cursory reading showed me that our respective views went well together on this point: but as he had not noticed it, it seemed unnecessary for me to speak of it, especially as I had then no time to read his work with care. Since, however, he now cites my views, himself finding the same position *in principle* common to his work and mine, and yet represents me as failing to see its generality and also to give it special applications, I think it only proper to say that in this he is mistaken. Of course we "motor-men"[5] welcome so able a coadjutor, and I do not mean for an instant to imply that Professor Judd has intentionally misrepresented me. But I have now for a decade so "harped" upon the motor factor, both in my publications and in my lectures, that I had begun to fear that I might be called a crank on the subject.

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REVIEWS AND ABSTRACTS OF LITERATURE

Essays on Evolution, 1889–1907. EDWARD BAGNALL POULTON. Oxford: Clarendon Press. 1908.

Professor Poulton is already known to many readers through his instructive little book on "The Colors of Animals" (International Scientific Series, 1890). To the zoologist his name is chiefly identified with important work upon protective coloration and "mimicry" among insects. The present collection of essays will be of interest alike to the general reader and to the special student of evolutionary problems. An ardent champion of the doctrine of natural selection in its most uncompromising form, Poulton remains faithful, throughout these days of hostile criticism, to the orthodox interpretations of "mimicry," "warning coloration," etc. His opening chapter, the introduction, is largely devoted to a protest against those twin fads of the hour, mutation and Mendelism;[1] and more particularly against the influence of Bateson upon current English biology. That active critic and investigator, and with him his school, are indicted under six heads, of which the last three are: "The exaggerated estimate of the importance for evolution of, first, Bateson's work on variation, secondly, Mendel's interesting discovery"; "The contemptuous depreciа-

[5] I recall the remark made to me in conversation by Professor Münsterberg about a decade ago to the effect—"You and I are the motor-men on the psychological electric car!" We are glad to have other motor-men with us, but we don't want to lose our own job!

[1] One may speak thus without calling in question the genuineness of certain important and well-attested facts.

tion of other lines of investigation directly inspired by the work and teaching of Darwin and Wallace"; and "The natural consequence of the last: a wide-spread belief among the ill-informed that the teachings of the founders of modern biology are abandoned." By zoologists of this school Professor Poulton's protest will doubtless be regarded as the fulmination of a hopeless reactionary; but we believe that the unbiased reader will have a good deal of sympathy with it. And those, at least, who have seen many of their youthful idols thrown down by these same ruthless hands, will take considerable personal satisfaction in this spirited counter-attack upon the destroyers.

It is interesting to note that while Morgan[2] finds strong support for the mutation hypothesis in the phenomena of protective and mimetic resemblance, it is precisely in this field that Poulton believes its operation to be utterly excluded. "It is as unlikely that a key could be made to fit a complicated lock by a number of chance blows upon a blank piece of metal, as that the elaborate pattern on the wings of a butterfly should have been reproduced on those of its mimic by Mutation" (p. xxiii). In a later chapter, after reciting the various methods by which transparency is brought about in the wings of those butterflies which are said to "mimic" hymenoptera, he feels warranted in declaring: "The comparison of these details is almost a demonstration of the operation of the Darwinian theory." Granting the facts as stated, they certainly do offer strong evidence for the view that the *usefulness* of the end to be attained has stood in some causal relation to its realization. And natural selection is the only (scientific) hypothesis extant which is consistent with this assumption in the present case. Is there not just a bit of overconfidence, however, in the claim (p. 267) "that, even if the theories which have been proposed as substitutes for Natural Selection have not been destroyed in single Sections of this essay—and I confidently believe that they have been thus destroyed over and over again—their most convinced supporters will admit that they must yield to the accumulated pressure of all the arguments here brought forward"? Our opponents do not commonly obey a summons to surrender as promptly as all that!

Even suppose, however, that the main contention of de Vries and the mutationists be granted, and that we admit the inability of the selection of ordinary individual or quantitative variations to raise permanently the mean of the species, "it is obvious that the variational material for evolution would be reinforced by no new category. The only effect would be to reduce the old category. The power which Darwin and others believed to reside in minute variations generally would be shown to exist in a part and not the whole of these" (p. xxxix). This criticism would evidently not apply to mutations of considerable magnitude, for the occurrence of great and abrupt modifications might obviate the acknowledged difficulty regarding the "pre-useful" stages of organs. It is true, we have no satisfactory evidence for such a sudden method of acquiring useful structures.

[2] "Evolution and Adaptation."

After a brief discussion of the phenomena of Mendelism and the claims of the Mendelians, he writes: "I should be the last to undervalue these results, but their true worth is not enhanced by such astonishing exaggeration as that which appears in the passage I have quoted. . . . The human mind is so constituted that a touch of megalomania is to be expected, is even to be regarded with sympathy, in the first flush of a new victory over the unknown. . . . But to suppose that the problem of evolution is thereby solved, or is likely to be solved, is unreasonable" (p. xxxiii). And again: "It is probable that the part played by Mendel's principle in evolution is limited to the prevention, in certain cases, of the supposed 'swamping effect of intercrossing'" (p. xxxiv).

The succeeding chapters (the "essays" proper) are ten in number, dealing, respectively, with "A Naturalist's Contribution to the Discussion upon the Age of the Earth"; "What is a Species?"; "Theories of Evolution"; "Theories of Heredity"; "The Bearing of the Study of Insects upon the Question 'Are Acquired Characters Hereditary?'"; "A Remarkable Anticipation of Modern Views on Evolution"; "Thomas Henry Huxley and the Theory of Natural Selection"; "Natural Selection the Cause of Mimetic Resemblance and Common Warning Colors"; "Mimicry and Natural Selection"; and "The Place of Mimicry in a Scheme of Protective Coloration." They are arranged in a logical, rather than a chronological, order. Only one (the last) was written for the present volume, though many have been revised and modified. The essays are of very unequal value, and there is, as would be expected, considerable overlapping and repetition.

The author's own standpoint, it is scarcely necessary to repeat, is "straight" natural selection. Lamarckism is rejected after considerable discussion and the presentation of some very forceful, if not wholly new, objections. The treatment throughout the volume is that of a partisan rather than of a judicial critic, though, on the whole, it is moderate in tone. The following sentence will doubtless arouse instant dissent in the minds of many biologists: "The more we study the characters of animals in general, even though we at first can see no utility, the more we come to admit this principle, and to believe that either now or in some past time the characters have been useful" (p. 106). He means, apparently, *all characters.* Had he said *most characters,* or the *fundamental characters,* there would have been no room for difference of opinion. Such claims, moreover, are not necessary to the theory of natural selection, nor do we grant that "if inutility could be proved for any large class of characters, the theory would certainly be destroyed as a wide-reaching and significant process" (p. 107). It may well be that the superficial "diagnostic" characters of the taxonomist are largely useless to the organism, as has been frequently asserted of late. We must concede, nevertheless, that in matters of bionomics the opinion of a well-trained naturalist, having a "speaking acquaintance" with a myriad of living forms, is worth vastly more than that of the average paraffin-imbedding, section-cutting, oil-immersion type of biologist, who is not over-particular as to just what species he borrows his material from, and who does not always

seem to bear in mind that living organisms are just as much realities as are (stained) cells and nuclei.

Essay number VI. deals with little-known and extremely interesting facts in regard to an English anthropologist, James Cowles Prichard, who, more than eighty years ago,[3] anticipated the now dominant views regarding the inheritance of acquired characters. Indeed, his utterances on this subject have such a distinctly modern sound that I can not forbear following Poulton in quoting from them. "It appears to be a general fact," writes Prichard, "that all connate varieties of structure, or peculiarities which are congenital, or which form a part of the natural constitution impressed on an individual from his birth, or rather from the commencement of his organization, whether they happen to descend to him from a long inheritance or to spring up for the first time in his own person—for this is, perhaps, altogether different—are apt to reappear in his offspring. It may be said, in other words, that the organization of the offspring is always modeled according to the type of the original structure of the parent.

"On the other hand, changes produced by external causes in the appearance or constitution of the individual are temporary, and, in general, acquired characters are transient; they terminate with the individual and have no influence on the progeny."

And these theoretic statements are supported by some of the well-known arguments. It must be added, however, that Prichard was not consistent in his adherence to these views and that the latter, together with some interesting foreshadowings of the evolution theory, were suppressed in later editions of his work.

Naturally the various phenomena of protective coloration and mimetic resemblance take a leading place in the volume at hand. The author regards the original "mimicry" theory of Bates as largely (but not wholly) supplanted by the theory of "common warning coloration" ("synaposematic coloration," in Poulton's language) originated by Fritz Müller. The former recognized only the imitation of offensive, and therefore "warningly" colored, insects by supposedly inoffensive and edible ones. According to the latter hypothesis, the "mimics" may be, and commonly are, likewise offensive. The ill-flavored, or otherwise repellant, insects of a given region—so the theory runs—adopt a common type of warning coloration. Thus the insect-eating animals of this geographical section learn to distinguish objectionable forms more readily than if a different "danger signal" had to be learned anew for each species encountered. It is needless to add that all these color patterns are supposed to have been acquired through the natural selection of advantageously colored individuals, without any conscious efforts on the part of the insects.

It is well to note, however, that the very existence of "warning" coloration has recently been called in question, and that by no means all biologists agree as to the significance of the facts of mimetic resemblance. Poulton and those of his manner of thinking have the advantage

[3] "Researches into the Physical History of Mankind," 2d edition, 1826.

of offering an explanation which is at least intelligible, however great a tax it may impose on the imagination. And they have the advantage—and a great one!—of a first-hand acquaintance with the facts in question. It is easy enough to write with flawless logic against the existence of one or another type of protective resemblance, while seated in the seclusion of one's study; but in this case, as elsewhere, it is apt to be true that "seeing is believing."

It would seem futile, however, in the present uncertain condition of our knowledge in this field, to draw up such an elaborate classification of adaptive colors as Poulton here offers us. Some four types and ten subtypes are distinguished, according to their hypothetical significance in the bionomics of the animal, each distinguished by a descriptive name of Greek origin. This strikes us as a little premature. Who can tell but many of these rather uncouth words will prove to be stillborn? We also wonder whether Poulton has always been duly critical in accepting the statements and interpretations of others. Many alleged illustrations are offered us of one or another of the phenomena under discussion, for which one more sceptical on this subject would certainly have demanded better evidence than is here offered us. We have in mind, for example, that remarkable lepidopterous larvæ (p. 253) the front part of whose body has been moulded by natural selection into close resemblance to an ant, while the remainder of the body represents some burden which the hypothetical ant is dragging after it! We should like to know, also, whether the current statement (cited by Poulton) as to the existence of a phosphorescent "lure" in the case of certain deep-sea fishes is anything more than a surmise. Experiment, or even direct observation, showing the real function of this organ, is, of course, out of the question, and it is more than possible that even the phosphorescence of the tentacle has merely been inferred from its structure. (The reviewer does not have access to the original descriptions.) Nevertheless it is stated, without any qualification, that the fishes in question "have a phosphorescent lure attractive to the other fish on which they feed" (p. 378). Perhaps they do, but is this anything more than a plausible surmise? In general, we think that, throughout the volume, the distinction has not always been carefully drawn between fact and interpretation. We are disappointed, too, by the slight mention of such experimental evidence as exists for the reality of warning coloration among animals.

Now and then we meet with what sounds like a bit of vicious teleology, though the author would doubtless repudiate such an interpretation of his words. Referring to the faithfully figured "fungus spots" upon the wing of the leaf butterfly (Kallima), he tells us that "these tall, black scales doubtless represent [*sic*], in form as well as in colour, the fructification in the centre of a patch of leaf-attacking fungus, perhaps the very kind which at a later stage of development produce the holes suggested by the 'windows' on another part of the wing surface" (p. 206). The endeavor to translate this statement into terms of natural selection, regarded merely as the survival of the fittest, seems to the reviewer to

reveal grave difficulties, either in that theory itself or in Poulton's interpretation of these particular facts.

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The Psychology of Advertizing: A Simple Exposition of the Principles of Psychology in Their Relation to Successful Advertizing. WALTER DILL SCOTT. Boston: Small, Maynard & Co. 1908. Pp. 269.

This handsome book, whose mechanical make-up illustrates Professor Scott's theory of advertizing, is dedicated to "that increasing number of American business men who successfully apply science where their predecessors were confined to custom." The publishers advertize the book as "an indispensable business-building book." The first eleven chapters give a simple outline of such processes as memory, feelings, instincts, suggestion, will, habit, laws of progressive thinking. The next four chapters are more special: XII., "Attention Value of Small and of Large Spaces"; XIII., "Mortality Rate of Advertizing"; XIV., "The Psychology of Food Advertizing"; XV., "The Unconscious Influence in Street Railway Advertizing." Chapter XVI. discusses the "Questionnaire Method, Illustrated by an Investigation upon Newspapers." Chapter XVII. concludes the book with a useful bibliography. The book has no index, but includes a list of illustrations, which are mostly facsimiles of actual advertisements.

Professor Scott writes interestingly, and it is not unlikely that some business men may be attracted to psychology by a practical study that appeals to a strong practical interest. The illustrations of advertizing are drawn for the most part from the advertizing sections of popular illustrated magazines of the better sort. It is to be hoped that Professor Scott's interest in applied psychology will stimulate other psychologists to test the value of their theories by means of practical observation and experiment. Since 1900 our author has been writing, not only on the theory and psychology of advertizing, but also on such subjects as the psychology of impulse and the psychology of public speaking.

As a rather surprising sign of the times, one notes that the author marshals a "selected list of the best books on advertizing" that includes forty titles in English and mentions twenty-three American magazines devoted to advertizing. Psychologists would be interested in corresponding lists for England, France, Germany, Japan, and other countries that believe "it pays to advertize." The bibliography also gives us twenty-two titles of "books on psychology which are most helpful to business men." This particular list would most likely undergo some revision if it were voted on by psychologists and business men generally. For instance, Wundt's "Outlines of Psychology" can hardly be considered popular enough for the average man interested in plain-sailing applied psychology. Over a hundred titles of articles on advertizing found in non-technical journals add to our impression that there is a wide-spread interest in advertizing and its psychology. Inquiry about business men's actual

psychological reading, however, would show, at least in some parts of the country, that great store is set by such books as Hudson's "Psychic Law" (and other weird psychic things). Perhaps books like Professor Scott's will do their part in pointing out to the laity the clearer paths of psychological progress.

Perhaps the most interesting chapter to psychologists is the study of the advertizing value of large, as compared with small, spaces. The general reader may find most food for thought in the last chapter, where newspaper reading is studied. And yet, such is the irony of fate in much that is called applied psychology, that we must confess to finding the least psychology in the most valuable chapters! However, we can hardly charge *that* to Professor Scott's account. His work is somewhat of the pioneering stripe, and we must be thankful for what he has given us and continue to hope that applied psychology will soon come to its own. This and other like books point out the advisability of cultivating the field of ethology, the psychology of character, in such wise that we may come to understand—something about which the votaries of eugenics care much—what things go together and work together in practical conduct and character.

It may give point to the last remark to instance a few cases in which Professor Scott's interpretation of the average man's reaction is rather doubtful. (1) In discussing how memory is keen in the case of facts exciting our feelings, the author says (p. 17): "The advertizement of Gold Dust pleases me and convinces me that the product is good. The advertizement of Rough on Rate amuses me because it is so excessively silly. It does not please me, does not convince me of the desirability of the goods." Trying these advertizements on others as well as on myself, I can not corroborate Professor Scott's conclusion. To me (and others) the Rough on Rats advertizement, exaggerated as it is, conveys the idea that one had better invest in Rough on Rats so as to avoid the household confusion brought about by the impetuous chase after a rat. On the other hand, the Gold Dust Twins do not seem as "cute" to those familiar with pickaninnies as to those who seldom see them. Both advertizements are funny and silly, and neither convinces me of the "desirability of the goods." Nevertheless at this moment I can not think of a single rat poison except Rough on Rats, and I can recall the name of Pearline and other washing powders. Were I obliged to purchase rat poison in a hurry, I should undoubtedly get Rough on Rats, little as I am convinced of its desirability. (2) The importance of individual differences and the danger of generalization from a subjective basis are illustrated by the author's statement about the most pleasing among a number of bisected lines (p. 27). We are told that "if a straight vertical line is to be divided into two unequal parts, you prefer to have the division come above the middle" (doubtless many estheticians would agree with this statement). I tried the experiment of "pleased choice" on four persons, with the following result: The mother of a family sided with Professor Scott, "because the line looked blacker and sturdier!" Her sister and

the negro man-servant chose the line cut in the middle, because it is "even." I chose (instinctively, while first glancing over the book) the line cut nearest the bottom, because when I was a child a slender stiletto always aroused my imaginative enthusiasm. (3) In discussing the advertizement of a lady suffering from obesity, our author says (p. 43), "I feel sorry for her and sympathize with her in her affliction. She certainly feels about the matter just as I should, and consequently it is easy for me to imagine myself in her stead and to feel the need for relief from obesity and to take the necessary steps to secure such relief." Now, certain people of my acquaintance are assuredly not affected in any such fashion. "Washing fat away" by the use of an "external remedy" does not appeal to them, nor do they feel sorry for the very comfortable-looking lady in the picture. Perhaps their "advertizing" sympathy is ill-developed. (4) The advertizement of the New York Central, on page 177, is labeled as having "weak attention value in any size." It is headed "5 Pointers," and the numerals, 1 to 5, appear in succession on the left-hand side of the page. In spite of the fact that none of Professor Scott's fifty subjects mentioned this full-page advertizement, I am inclined to think that further investigation would show that travelers intending to visit the territory covered by the New York Central, while they might not notice the advertizement in a rapid scanning of advertizements for experimental purposes, would read the advertizement when their prevailing interest was connected with the attitude of "travel." Much depends on prevailing attitude and interest, and advertizements overlooked in one mood may be carefully read in another. The present writer, who travels a great deal, was struck by this advertizement and read it through carefully. In short, this advertizement may serve the specific purpose for which it was intended, and that is just about what an advertizement ought to do.

Professor Scott has an interesting table, on page 236, wherein it is shown that interest in local news, political news, and financial news far exceeds that in the other items of news. A thorough-going ethological treatment would connect these results with the author's chapter on instincts. In any scheme of applied psychology the appropriative, gregarious, and expressive instincts would have a large treatment. These newspaper results would connect together the fundamental informational or sensational instincts in a very suggestive manner.

The book is decidedly worth reading, especially by the increasing number of hard-headed folk who believe that a science, like a soul, is known unto all men by its fruits. Unquestionably one of the fruits of the study of psychology in any of its phases is general culture, another is increase of analytic power—and there are other admirable fruits. But, in the long run, the public in general will judge the science of mind by its practical explanatory and suggestive power. Books like this deserve to be welcomed on all hands.

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The Fragments of Empedocles. Translated into English verse by WILLIAM ELLERY LEONARD. Chicago: The Open Court Publishing Co. 1908. Pp. viii + 92.

This translation of the "Fragments of Empedocles" deserves credit for the extent to which it preserves the exact meaning, together with the beauty and power of the original. The translator is primarily a literary workman attracted to Empedocles as poet. Yet a careful study of Empedocles as philosopher is made the basis of the work, and in a general introduction and explanatory notes following the text the needs of students of philosophy are sufficiently kept in view so that the book will be a useful manual for the study of Empedocles.

A poetic rendering of the fragments, if ably executed, is, in an important respect, a better basis for their interpretation than the most painstaking prose translation. If, by the retention of the poetic form in which the writings "On Nature" and "The Purifications" were originally cast, the translator enables us to fall imaginatively into the spirit of their conception, he has given a considerable aid towards their correct appreciation. Apart from the general inadequacy of translations, we discover in the best prose versions of the fragments an ineffectiveness due to our recognition that the texture of Empedocles's thought is poetic. The philosopher brings to view a world drama, with love and strife in alternate ascendancy; a panorama of cosmic activities, where organic life arises under striking, almost spectacular conditions. Empedocles has a method of explanation that is essentially poetic. In exact reasoning he is not the equal of other early Greek thinkers, while he excels in the variety and vital quality of his thought. Even his so-called anticipations of science attest the daring imagination of one temperamentally a poet. It is for this reason that by producing a strong and dignified rendering of the fragments in English verse, Dr. Leonard has performed a more significant service for the study of Empedocles than the translator ordinarily achieves.

The general fidelity to the original is closer than would be foreseen as possible under the conditions of metrical form. The Greek text of each fragment accompanying its translation offers a ready means of check where departures have been necessary for clearness or adaptation to poetic requirements. Besides unessential variances by which the meaning is not affected, in a few important passages a free rendering is made which might give rise to misconception. But literal translations are usually given in the notes. In Fragment 6, *τέσσαρα γὰρ πάντων ῥιζώματα* appears in translation, "the fourfold root of all things." *ταῦτα*, by which Empedocles makes facile reference to the primordial four, is rendered "the elements," by supplying *στοιχεῖα*, a term nowhere used by Empedocles. In the translation of Fragment 21, there is an obscurity not occasioned by a difficulty of the text in the line "Aught that behooves the elemental forms."

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AUSTIN, TEXAS.

Procli Diadochi in Platonis Cratylum Commentaria. Edidit GEORGIUS PASQUALI. Leipzig: B. G. Teubner. 1908. Pp. xiii + 149.

The present edition is clearly superior to its predecessors, and we may be grateful alike to editor and publisher for a product which may be used with confidence along with Kroll's edition of "Proclus on Plato's Republic" and Diehl's edition of his "Commentary on the Timæus." In addition to the text and the *apparatus criticus* at the foot of the page the editor has provided four indices, dealing, respectively, with authors quoted or referred to, with noteworthy words, with etymologies and glosses, and with neo-platonic elucidations and comments to the Cratylus. The last-mentioned index, though occupying less than two pages, is invaluable. The index of noteworthy words is good; but one wishes to have a complete list if any is to be given.

Intrinsically the commentary—or rather the extracts, for only such survive—of Proclus on the Cratylus does not compare favorably with those which he supplied to the Republic and to Timæus; but, even so, there are nuggets of much value, though relatively few, to be found in the deposit of the neo-platonic stream of criticism and elucidation, which flowed generously about the Cratylus. Occasionally a commentator had the insight to perceive that Plato was indulging in a frolic, but in general what he says is taken as if meant in all seriousness. To be sure, Plato had a serious purpose even in his jesting, and now and then Proclus helps us to a better appreciation of his thought and argument.

W. A. HEIDEL.

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. January, 1909. *Correspondance inédite de Ch. Renouvier et de Ch. Secrétan* (pp. 1–47). – A set of letters concerning many philosophical opinions and writings of the authors, enlivened by personal and human touches. *L'expérience morale* (pp. 48–51): F. RAUH. – The preface to a second edition of M. Rauh's book of this title. *Le premier système de Nietzsche ou philosophie de l'illusion* (pp. 52–86): CH. ANDLER. – A study of Nietzsche's first period in which his philosophy is not a theory but a psychology of knowledge, derived from Schopenhauerian and Darwinian sources. *Études critiques. Sur de récents travaux de philosophie physique d'Abel Rey:* H. MICAULT. *Enseignement. Psychologie et pédagogie ou science et art:* L. DUGAS. *Questions pratiques. Conditions d'une doctrine morale éducative (suite):* J. DELVOLVÉ. *Supplement.*

ANNALEN DER NATURPHILOSOPHIE. Band 7, Heft 4. December, 1908. *Zur Regulierungsfunktion im Zentralnervensystem* (pp. 353–372): F. SIMBRIGER. – An inconclusive consideration of the problem of the unitary action of the cortex from the physiological side. *Die*

Begrundung der Energetik durch Leibniz (pp. 373–386): A. E. Haas. – Leibniz first clearly expressed the fact that in transformations of energy there is no loss or gain, and he marks the climax reached up to the time of Robert Mayer and Joule. *Zur Entstehung der Arten* (pp. 387–392): O. Nagel. – *Mechanismus oder Vitalismus* (pp. 393–409): P. Frank. – Neither mechanism nor vitalism may stand upon "parsimony of causes," since the former escapes the "constants" of the other only through the introduction of hypotheses which the latter does not need. The questions they discuss are three. *Die historische Analyse des Energieprinzips* (pp. 410–416): A. E. Haas. – The principle of energetics is compensation, which satisfies both of the old philosophical demands—for permanence and for unity. *Politische Okonomie und Energetik* (pp. 417–428): O. Nagel. – An attempt to apply mechanical terminology to social phenomena. *Eine Revision der Grundgesetze der Materie und der Energie* (pp. 429–443): G. N. Lewis. – A new system of mechanics proposed to unify modern conceptions, in which mass shall be dependent upon velocity, the moment equal mv, and kinetic energy vary between $\frac{1}{2}mv$ and mv, as the velocity varies between 0 and the velocity of light. *Dedekind und Bolzano* (pp. 444–449): J. Baumann. – Their theories of infinity. *Von Cyons neue Grundlegung der Mathematik* (pp. 450–458): J. Baumann. – A discussion of the theory that the labyrinths are the seat of the mathematical sense for space and time. *Psychographischen Studien. II. Julius Robert Mayer* (pp. 459–498): W. Ostwald. – The contrast between Mayer and Davy emphasized in the unhappy disposition, narrow sympathies, and bad fortune of the former. Mayer's peculiar freedom from attachment to established ways of thinking. *Neue Bücher* (pp. 499–525): W. O. – W. Pollack, *Die philosophischen Grundlagen der wissenschaftlichen Forschung.* E. Becher, *Philosophische Voraussetzungen der exakten Naturwissenschaften.* H. Witte, *Über den gegenwartigen Stand der Frage einer mechanischen Erklarung der elektrischen Erscheinungen.* E. Rignano, *Über die Vererbung erworbener Eigenschaften.* R. Goldschied, *Entwicklungswerttheorie. Entwicklungsökonomie. Menschenökonomie.* C. Wenzig, *Die Weltanschauungen der Gegenwart im Gegensatz und Ausgleich.* H. Driesmans, *Dämon Auslese.* W. James, *Der Pragmatismus.* E. Hormeffer, *Wege um Leben.* A. Wagner, *Streifzuge durch des Gebiet der modernen Pflanzenkunde.* R. Sleeswijk, *Über die Bedeutung des psychologischen Denkens in der Medizin.* C. Siegel, *Herder als Philosoph.* G. F. Lipps, *Mythenbildung und Erkenntniss. Die Philosophie im Beginn des zwanzigsten Jahrhunderts. Festschrift für Kuno Fischer,* herausgegeben von W. Windelband. M. Verworn, *Die Mechanik des Geisteslebens.* E. A. Boucke, *Goethe's Weltanschauung auf historischer Grundlage.*

Külpe, Oswald. *Immanuel Kant: Darstellung und Würdigung.* Leipzig: B. G. Teubner. 1909. Pp. vi + 163.

Maugé, Francis. Le Rationalisme comme hypothèse méthodologique. Paris: Félix Alcan. 1909. Pp. xii + 606.

Richert, Hans. *Schopenhauer: Seine Persönlichkeit, seine Lehre, seine Bedeutung.* Leipzig: B. G. Teubner. 1909. Pp. 114.

Vial, Louis Charles Emile. *Les Erreurs de la Science.* Paris: chez l'auteur. 1908. Pp. iii + 446.

Voss, Dr. A. *Über das Wesen der Mathematik.* Leipzig und Berlin: Druck und Verlag von B. G. Teubner. 1908. Pp. 98.

NOTES AND NEWS

To the Editors of the Journal of Philosophy, Psychology and Scientific Methods

Gentlemen: The Journal of Philosophy reported in its issue of March 4 that I am about to publish this spring a new book entitled "Psychology and Crime." I beg to say that it is a misunderstanding. The book which has appeared under this title is a London edition of my little volume called "On the Witness Stand: Essays on Psychology and Crime," which appeared here last spring. The English publisher has made this change of title without my consent and without my previous knowledge. The only books which I am to publish this spring are "Psychotherapy" (Moffat, Yard & Co., New York) and "The Eternal Values" (Houghton, Mifflin, Boston). The latter volume is in its chief parts an English version of my "Philosophie der Werte."

Very sincerely yours,

Hugo Münsterberg.

Cambridge, Massachusetts,
March 13, 1909.

The next meeting of the Western Philosophical Association will occur in St. Louis, the 9th and 10th of April. The meeting is held in St. Louis to commemorate the semi-centennial of the history of philosophy in the West, which had St. Louis for its early center. It is proposed that those who contribute papers keep in mind the different phases of the philosophy emphasized by this early movement, especially Hegelianism. Information regarding the subjects of these papers may be had by addressing the secretary, Professor John E. Boodin, University of Kansas, Lawrence, Kansas.

The *Rivista Filosofica* and the *Rivista di Filosofica e Scienze Affini* have been merged. The new journal is to be called the *Rivista di Filosofia.* Communications should be addressed to Professor B. Varisco at the University of Rome.

The death of Dr. Simon Summerville Laurie, professor emeritus in the University of Edinburgh, is announced. Professor Laurie wrote much on the subjects of ethics and education.

The Society of Anthropology of Paris celebrates the fiftieth anniversary of its foundation on the seventh, eighth, and ninth of the coming July.

The death has been reported of Dr. Herman Ebbinghaus, Professor of Psychology at the University of Halle.

Vol. VI. No. 8. April 15, 1909.

The Journal of Philosophy
Psychology and Scientific Methods

THE MYSTICAL AS A PSYCHOLOGICAL CONCEPT

CURRENT usage of the term "mysticism" is unprecise and inconsistent except at one point. Speculative or epistemological mysticism is well understood as a theory of immediacy, and specifically such immediacy as causes the finite search to cease because the other is no longer another. Professor Royce has given us a searching analysis of this epistemology,[1] but his plan did not require an investigation of the genesis of the experiences out of which speculative mysticism grows. Professor James names four marks of the mystical state—ineffability, noetic quality, transiency, and passivity[2]—but his attention, in turn, was upon the value rather than upon the genesis of the experience, and consequently the marks that he enumerates are borrowed without thorough criticism from the unscientific introspection of the mystic himself. Leuba, Murisier, Delacroix, and others have worked out either special aspects of mysticism or the psychology of a particular group of mystics, and in these studies there are many illuminating glimpses into the broad field of mysticism as a whole. Yet I know of no attempt to run a line around this broad field so as to determine its boundaries, nor have we, so to speak, a general physiography of it. The content and value of the mystical experience rather than its form and genesis have been the favorite topics of investigation.[3] As a result, psychologists feel free to use the term mysticism in any sense that suits their incidental purposes,[4] and even careful writers on religion define it with an arbitrariness that practically ignores both psychol-

[1] "The World and the Individual," Vol. I., Lectures II., IV., V.

[2] "Varieties of Religious Experience," pp. 380 ff.

[3] I have attempted elsewhere to show that the merely formal conditions of ecstasy have much to do with its content. See "The Sources of the Mystical Revelation," *Hibbert Journal*, January, 1908, pp. 359–372.

[4] For example, mysticism is defined as "the doctrine that events in the object-world, physical events as well as psychical, are not always subject to natural law, but are sometimes influenced in a manner that is fundamentally inexplicable from the standpoint of the causal conception of nature." Münsterberg, "Grundzüge der Psychologie," I., pp. 170 ff.

ogy and history.[5] No wonder that popular speech plays fast and loose with the term, and that the religious world is in confusion as to the whole notion of religious experience.

How can we hope to make any approach toward precision in the use of this term, or secure a basis for a general evaluation of religious mysticism, unless we first make a general survey of the facts that seem to call for a common name? Such a survey ought to show whether or not any definite psychological fact or notion lies at the basis of the problem, and it will certainly do this if it reveals the genetic relationships of different types of mysticism.

As a rough attempt at such a survey, a tabular view of "the mystical" is herewith submitted. In the main it will explain itself. It takes its start from what is universally recognized as completely mystical, namely, religious ecstasy, together with the theory of it and the practise that seeks to realize it. In the next place, certain less extreme experiences, common to the great mystics on the road toward ecstasy, and to a multitude of those who never reach ecstasy at all, fall into place as mystical in the same sense as ecstasy itself. A convenient name for them is "inspirations." These, in turn, give rise to a belief and a practise. We next notice that experiences of the same psychological type take place outside of what is conventionally called religion. We might, indeed, extend the term inspiration beyond the religious usage. For spiritism gives us supposed inspiration by a deceased human being, telepathy by a living one, and clairvoyance and premonition by, perhaps, the nature of things. A common term for the phenomena in this field has, however, come into general use, namely, "psychical phenomena." For the practise of non-religious inspirations we have the general term "mediumship." Finally, looking to the historical genesis of these practises, we come upon the primitive root of the whole in automatic experiences interpreted as "possession," and cultivated by the "medicine man," the shaman, or the "witch doctor."

Complete enumeration is, of course, not intended, but only suggestion of the whole through typical classes. Nor is the table intended as an exhaustive division into mutually exclusive classes. The table does, however, group together phenomena, beliefs, and practises that are psychologically coherent, and it indicates the true psychical and historical genesis of the more developed practises. The psychical genesis of the whole is the duality, which is yet im-

[5] Mysticism is the "attitude of mind which divines and moves toward the spiritual in the common things of life." F. Granger, "The Soul of a Christian," p. 41. "Mysticism is the love of God." W. R. Inge, "Studies of English Mystics," p. 37.

mediacy, that appears when automatic control occurs. Here is the psychical root of the whole of mysticism.[7]

A Survey of the Mystical

The Experience	Supposed Source or Content	The Deliberate Practise
The supreme mystical state (religious): Either Ecstasy or Permanent Automatism Supposed form: Complete absorption or loss of personality. Supposed content: Either zero or infinity. But these are only limiting notions.	God Tendency toward pantheistic conception	*The attempt to realize God as the all:* Yoga The Christian "Via Negativa" Christian Science and New Thought The method: Narrowing of attention and auto-suggestion.
Incomplete mystical states (religious): Inspirations The experience of the seer; Sense of guidance or of illumination;[6] Assurance or the witness of the spirit; Sense of divine communion; "Sense of presence"; "Anesthetic revelation"; "Cosmic consciousness." The form: Partial abeyance of self-control in mental functions. Occasionally, loss of muscular control also. The content: Somewhat specific ideas which commonly seem to be self-evidently or infallibly true.	God or Gods Generally conceived as transcendent	*Attempts to realize the God on special occasions or for special ends:* Oracles and Other Methods of Penetrating the Unknown Some Forms of Revivalism Holiness Movements and Allied Practises Divine Healing Transubstantiation The method: Surrender or quiescence of will, suggestion (largely social).
Incomplete mystical states other than religious: "Psychic Phenomena" This term includes supposed spirit-communication, telepathy, clairvoyance, premonition, etc.	A Spirit, A Living Man, or The Nature of Things	*Attempts to take advantage of supposed occult connections:* Mediumship in its Various Forms
The primitive root of the whole: Automatic Experiences Interpreted as Possession	Spirits	*Attempts to control spirits:* Certain Parts of Magic Shamanism

[6] Here belong conversion experiences in which the subject feels that his questions are decided for him, or that his attitudes and decisions are wrought within him by God, or Christ, or the Holy Spirit.

[7] It is not necessary for my purpose to maintain that a sense of immediacy to an other appears in connection with all automatisms, as, for instance, mul-

Leaving the details of the survey to explain themselves, I shall now offer some comments with a view to rendering still more precise the general character of the whole mystical movement.

1. The contrast between the mystical and the non-mystical upon which attention has chiefly centered concerns cognition. But certain phases of this contrast have been neglected. In the intellectual analysis that we call science, the mind is highly self-controlled (whatever self-control may ultimately be); it is thus that science seeks to reduce the less known to terms of the better known, the extraordinary to the ordinary, the complex and obscure to the simple and obvious. Mysticism, on the other hand, tends to reverse this process at every point. Having surrendered self-control, the mystical consciousness can not be analytical or critical. It deals with wholes rather than their elements, with conclusions rather than grounds; it reads the ordinary and simple in terms of the extraordinary, the complex, the undefined; in general it affirms, but does not deny. It is in strict accord with this, that when a mystic undertakes to philosophize, he is almost certain to pursue an *a priori* method and to seek alliance with one or other of the great speculative systems which find it easy to understand being in its totality, but hard to grasp its parts.

2. While the debate between the mystic and his opponent has almost always moved within the sphere of epistemology toward the concept of substance, another aspect of mysticism, and a not less debatable one, has been relatively unnoticed. Corresponding to the contrast between self-control and automatic control in cognition, there is a radical opposition in the sphere of values and purposes. On the one hand, we have values analyzed, approved, worked for in the full light of the individualized consciousness; on the other hand, we have values hit upon more or less fitfully in conditions of automatic control.

3. If we ask what valuation attitudes are, as a matter of fact, characteristic of automatic control, we come upon what appears to be a paradox. At first thought we should expect a reversion toward primitive instinctive evaluations. In demon-possession, in fact, we have such a reversion at times, and it is well known that the primal instinct of sex plays a prominent part in Christian mysticism. It is likewise true that the mystical state is less differentiated than the self-controlled state. In spite of all this, however, the practises

tiple personality. Yet such a thesis could make out a better case for itself than is commonly supposed. The investigation of multiple personality, post-hypnotic suggestion, hypnotic amnesia, etc., has naturally fixed attention first of all upon the contrast, the apparent duality. But it would be easy to show that, ordinarily, and perhaps always, this duality does not involve psychic discontinuity, but, on the contrary, involves a sense of immediacy to an other.

included in our survey make, all in all, for the maintenance of acquired moral standards. This is one chief source of their attractiveness, as it is also a ground of defense. How is it, then, that practises that surrender self-control are nevertheless so morally controlled? The reason is, that when self-conscious or rational control, with its tendency toward variation from type, ceases, its place is taken by social control. The habitual, the commonplace, the socially expected, is what ordinarily comes to the surface. The oracle, the yogi, the revivalist, all stand for the conservation of ethical standards. Thus, in spite of the fact that the *method* of mysticism is antithetical to moral self-guidance, its *product* is ethically conservative.

4. This fact has had momentous historical consequences. Whenever a rationalistic or scientific movement is seen to be undermining dogma, religion takes refuge in mysticism. This is not at all because mysticism has any peculiar competency in the interpretation of anything, but because it can be relied upon to conserve socially approved values, and because it promises an immediate experience of the values that are threatened. Here is the deepest root of supernaturalism. Its strength lies not in any articulate inspirations that it has to offer—for the most part it has at present no fresh inspirations of its own, but relies upon the inspirations of thousands of years ago—but in its promise of protection against threatened changes in moral values. For moral progress, therefore, we have to look elsewhere than to mysticism. Between mysticism and reflective morality, with its ever-repeated break with customary standards, there is a fundamental antithesis, namely, that between the highly individualized, self-controlled ethical will and automatic control which, as far as it goes, is preindividual and subindividual. When, therefore, religion becomes strongly ethical, mysticism becomes a hindrance, and at last, corresponding to the religious reaction from rationalism toward mysticism, we have a religious reaction from mysticism toward some sort of ethically progressive faith. Paul himself, mystic as he was, was able to point out "a still more excellent way," and the churches of to-day are moving out of mysticism toward this way of socially regenerating love.

5. Therefore, the identification of mysticism with religiousness in general goes astray. It is false at many points. For not only does ethically progressive religion break with the authority claimed for automatic inspirations; and not only is the development of individuality opposed to automatic control; but also, between religious mysticism, on the one hand, and spiritism, telepathy, and mediumship in general, there is no dividing line. The psychical process is the same, the ground of certainty is the same, the whole forms a

unit which constitutes the only distinctive basis for a definition of mysticism.

6. The mystical, then, is simply the automatic in general interpreted as ontological immediacy to any being whatever, divine, human, or subhuman. In strictness, the mystical is not a psychological term at all, since ontological interpretation is of its essence. Perhaps only a few psychologists are incautious at this point, but certainly the world of culture at the present day does sorely need to understand: *First,* That there is no distinctive "mystical experience," because the psychical factor in mysticism, the automatic, is entirely general, and not a kind of experience with distinctive content of its own. *Second,* That mysticism is not to be identified with religion or with any part of it. It is not true that all religion is mystical, or that all mysticism is religious.

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THE BASES FOR GENERALIZATIONS IN SCIENTIFIC METHODS

IN that all true induction involves generalizing on the basis of particulars, the question of the conditions under which various numbers of particulars are required for a generalization stands as a fundamental question in discussing inductive methods. There is no doubt that at times we are justified in making "sweeping statements" on small evidence, statements as to the quality of a certain brand of note-paper, for instance, on the evidence of a single small square; whereas at other times we ask for a more complete test, for a sample, perhaps, from the middle, the top, and the bottom of a barrel of apples, or for the examination of some hundreds of Italian immigrants, before we are ready to come to a conclusion. Several considerations seem to affect the investigator's judgment of the sufficient evidence for a generalization. The following classification attempts to group these in such wise as to suggest the questions one might well ask oneself before undertaking an investigation or criticizing a piece of work:

A. Only part of the field discussed is investigated.
  I. The field shows uniformity
    1. Over the field as a whole.
      a. Absolute.
        (1) Complete isolation possible by direct means.
        (2) Complete isolation possible by indirect means.
        (3) Delicate technique calls for repetition of experiments.
      b. General uniformity.

(1), (2), (3), as under *a*.

2. Within the several distinct portions of the field.

a and *b*, as under 1.

II. The field investigated shows relatively no uniformity.

1. Standard conditions, variations quantitive.

2. Conditions non-standard, or variations non-quantitive.

B. Whole field investigated.

When the total field *B*, is tested, either descriptions or complete inductions are drawn up. In such a case no real generalization is made; thus the interest of this paper centers in class *A*.

The most marked contrast within the field of generalization is between those cases where we draw our conclusions with apparently reckless trust in a few examples and those where we build our foundations very nearly as wide as the superstructure. Roughly, the difference is between the more exact sciences and the use of statistical methods. The difference itself seems to rest on the presence or absence of our confidence in the representative character of the different examples. When the field of investigation is uniform, as in the instance of the note-paper mentioned above, a small piece is enough to test, for we believe all paper will take the ink in the same way. On the other hand, if the field is as various as the physical condition of the school children of New York city, a conclusion to be of real value must rest on the study of some "quorum" of cases, the more the better.

There may be uniformity over the field investigated as a whole, or within the several distinct portions of it; that is, we may work with representatives at large or by districts. Number 2 under I. covers the latter case, that where we work with classes showing distinct kinds within them. We then select one example or a group of examples of each kind to test. The single example is no longer enough, but the group tested represents all divisions of the total field. Pasteur used this method in the first of his work with the disease pébrine.[1] One part of scientific investigation which calls most for judgment and wide knowledge centers around the question of the place of uniformity, the parts to be sampled, if one is to win a fair idea of the quality of,—let us say, a boatload of grain. Sometimes this method of using a carefully selected group is called into play where the investigator's interest is in pointing out or studying the very variation itself, in showing, for instance, that air in the Alps has fewer germs than air in the country, and that again than air in the city streets; or in determining the relative virulence of a medula oblongata infected with rabies,

[1] "The Life of Pasteur," R. Vallary-Raelot (McClure, Phillips, & Co., New York, 1906), pp. 118, 120.

as it dries one, two, or three days. In all these cases, a group of examples representing each of the different kinds found in the class as a whole gives the material to work upon.

Where such uniformity as is found belongs to the field as a whole (I., 1), it is true that we also sometimes call for a small group instead of a single example in testing for the nature of that field, but such a group is very different, from a logical point of view, from the selected group. Where complexity of condition, or ignorance, makes it impossible to be certain of discriminating the eccentric individual, several are tested—three, ten, or twenty guinea-pigs are inoculated—instead of only one. There is no selection here, variation is generally and vaguely accepted as possible, not specifically placed. Each example is believed representative of the whole, if a few examples agree. The headings *a* and *b* indicate the distinction in method between taking one example and such a small group. In testing the kinds of a field (I., 2), either of the two methods will be applied to the test for each kind, according to conditions. That is, we have subheadings *a* and *b* under 2 also.

The lowest subdivisions under I., the bracketed numerals, draw distinctions of method on a new basis, that of the character of the technique used in experimenting. It is frequently necessary to bring into play a number of examples of a field in question, not because no one of them is representative of the field, but because we have at our command only very complicated means for learning what we want to learn. In determining the charge of an electric corpuscle, for instance, it would be satisfactory to rest with the evidence of a single corpuscle, could it be gained directly. As things are, it is necessary to pass a charge of some strength through moist air, measure the quantity of water precipitated and the size of a single drop, and so compute the charge of a single corpuscle.[2] The reason for bringing into play in this case a much larger amount of electricity than is necessary to represent the field is that our instruments are not fine enough to deal with less. In biological work the number of animals used is multiplied similarly. A normal dog is inoculated with the virus every time that a refractory one is tested, because we have no other means of being sure of the condition of the virus. The conditions that lead to this use of a larger portion of the field because of imperfect technique, I have called those for indirect isolation. The conditions grouped under (3) are similar. Here we multiply our tests, perhaps because of the chance of breakage through a long experiment, or of some slip on our part in very delicate measurements or tests. Most experiments are, apparently, repeated

[2] "The New Knowledge," R. K. Duncan, Part III., Chap. VII.

for this reason before they are announced. In Pasteur's life, however, one instance is given where a single test was enough, that is, one instance of the method (1).[3] So far as I can understand it, the term "control experiment" is used not only for the side test called for under (2) and (3), but also for the multiple experiment, *b*. For the purposes of logic, we might wish it were kept for these subsidiary experiments required by the nature of the technique, for certainly that brings a new factor into play. This element enters, of course, to complicate the methods that fall under *b* and under 2 also.

When the field shows relatively no uniformity, the methods are quite different. The only distinction that I can find to note there is that which gives rise to the use of an arbitrarily created representative or a kind of lay figure, such as an average, or a mean. These are used where the ground of variation is quantitative and the conditions that lead to it relatively standard (II., 1). Much of the work done in computing the mean is, indeed, concerned with making the conditions standard. The nature and difficulties of this method are shown in the investigations of the effect of overcrowding upon the development of the school children of New York. So long as the conditions that determine variation are believed standard, that is, in play in all the groups compared, the use of averages to represent the different groups is legitimate, but under the suggestion that difference in race varied those conditions in part, belief in the genuineness of that representation withers away.

In such a case (II., 2) the methods left to use are those under *B*, with an important addition. Graphs, classifications (such as this tries to be), and tables are often drawn up for a whole field on the basis of a portion, usually a large portion, of that field. A step beyond complete induction is thus taken, a step such as Mendeléef took when he predicted that any chemical elements found later would fit into his table of the periodic law.

It will be wholly false to the facts to give the impression that I find the methods used in scientific investigations slip unquestionably and invariably under some one of these headings. There are what may be called transition methods at play; as, perhaps, where one may be but half satisfied with the method of selected groups is to be abandoned for a representative at large, one tests two or three only, and not all the "kinds" within the field. Still I find that the distinctions noted here mark the main points to consider in forming a judgment of the amount of evidence needed if one is to generalize safely about a given field.

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[3] *Loc. cit.*, p. 39.

DISCUSSION

REPLY TO PROFESSOR FRAME

ACCURATE criticism is an invaluable safeguard and often can be received profitably in silence. Perhaps silence is a safe resort also where criticism is contrary to fact and tinged with prejudice, in accordance with a principle enunciated by Henry Ward Beecher that upon meeting in the road an animal of the species *mephitis mephitica* it is the better part of valor to go around him and surrender the middle of the road.

I wish, however, to make this belated protest against the statements of Professor J. A. Frame[1] regarding the writer's "Education and Problems of the Protestant Ministry"; the latter is a reprint of a condensed series of articles which it is hoped may appear eventually in more elaborate and carefully edited form. This delayed protest is written at the suggestion of friends, who urge that the matter should not be ignored. More than one of these friends are progressive seminarians.

Professor Frame is exercised with reference to the incompetency of persons called upon to give their judgment regarding the duties and ideals of ministers. After the manner of disputants who rely upon humor rather than fact when cornered, he dubs these persons "experts" (his interpolation), and then proceeds to show that they are not experts. The reviewer totally failed to grasp the writer's evaluation of these witnesses, since a leading argument of the whole discussion is that the minister's activity is often circumscribed by the opinions and demands of conventional church-goers rather than by experts; that the unreasonable demands, whims, and theories represented by this group of church-goers, who are informed upon the subject in the conventional sense, usually handicap even a well-equipped and honest pastor. For such a minister the writer repeatedly expresses his respect and sympathy.

With fitting sarcasm our reviewer writes:

> In the treatment of the first point, there is a running comment upon the replies received from a hundred or more persons whose opinions were solicited in reference to the qualifications of the minister—intellectual, moral, and the like—and in reference to his pastoral duties—the matter of sermons, prayer, communion, baptism, marriage, etc. The suspicions one might have as to the competency of the witnesses are allayed in advance by the assurance that the persons "are informed upon this subject" (p. 9). It is interesting to note the disagreement among these experts. . . . While the reader who is actually engaged in the business of training college graduates for the pastorate is grateful for the opinions of these experts, he would have been still more grateful to them had they bothered to give reasons for their opinions.

[1] This JOURNAL, October 8, 1908, pp. 580, 582.

Our critic and philological judge affirms that he is engaged in the "business of training college graduates for the pastorate"; of course there are the hypercritical persons outside of seminaries who might affirm, in view of the enormous sums of money wasted in seminary endowments and property (which altogether are greater than law and medical endowments and property combined, and yet benefit only one fifth as many students, p. 58), as well as because of the mechanized methods of some seminaries, that his is a very poor kind of "business." Neglecting this digression, it is interesting to contrast with the statements above quoted the actual paragraphs referred to in the "Education and Problems of the Protestant Ministry," and some of the context, which I understand seminary experts in hermeneutics say it is not safe to omit in honest exegesis:

"Custom, that monster, custom, who all sense doth eat," feeds the minister; when unkind custom can not be ignored, it must be rebuked or conciliated. The whims of the populace, the unwritten code which places the minister at the service of the people day and night, the conventions regarding his habits, the conversation, amusements, dress, sermons, as well as the formal vows and creed, offer formidable influences for the lover of spiritual freedom to meet. Whether in the atmosphere of a self-assured radicalism or of iron-clad orthodoxy the minister must suffer where these factors exist; spontaneity crushed in him leaves little power to stimulate those who hear, and there results in the field of organized religion arid wastes of uniformity (p. 8). As constituted in age, sex, nationality, occupation, and religious preference, the group is fairly representative of American church-goers. A more than average type of intelligence is represented; numerous highly representative men, strangers to the author, responded with surprising promptness and care (p. 12). If an objector holds up his own ideal in contradiction to the content of this chapter, let him remember until he can bring to bear upon the problem more numerous testimonies than are presented in our small group, that the voices of more than a hundred persons, informed upon this subject, remain more instructive than the voice of but one man (p. 9). It is desirable to ascertain the individual experiences, ideas, and the conventional attitude of church-goers regarding the minister and the church, for these are the mental factors with which he actually deals. We can not cipher out all this *a priori*, and must collect it in burdensome, inductive fashion from persons to whom the problems are matters of living interest (p. 10).

Another parallel comparison of the review and the reviewed is relevant.

Says Mr. Frame:

The conclusion which the author draws from the possession of what he calls "a rude cross-section of the minds of a small group" amounts to little more than this: that the pastor is a valuable man in the social group and that he should be better trained.

Here are the actual conclusions, referred to in the above lines:

Abstracting and repeating the conclusions suggested by the material in this chapter we recapitulate in a few words:

(*a*) The ministerial profession has high present value and possibilities as a social group.

(*b*) The minister theoretically embodies the highest human ideals.

(*c*) In practise, he is forced to drudgery and humiliating restrictions.

(*d*) Abandonment of trivial, exacting, and of poverty-breeding labors imposed solely by custom and organizations should be undertaken by pastors, but with assumption of the burdens of new issues laid bare by science.

(*e*) Educational methods to promote intellectual longevity are demanded. Continued varied interests are equally important for efficiency and happiness.

(*f*) Admission to the ranks of religious and moral specialists should be made impossible to weaklings and parasites. The newly revealed responsibilities of the ministry require the best of men and better methods than now exist for their training (p. 53).

The undersigned returns thanks for the references mentioned with such delicacy and hesitancy; perhaps it might be profitable for him also to review the elusive details of philology, a modicum of which he once knew when he taught dead languages. In regard to the designation of his modest essay as a "book," the author regrets that a slip of the pen must have caused him to neglect the substitution of a proper word in place of *book,* when condensing for the printer the seven original chapters. He must decline the invitation of Mr. Frame for "a real discussion of the function of the minister and the nature of his method before plunging into a critique of the methods and work of existing seminaries." *A priori* discussions of such problems do not offer attraction, and besides, fossilized seminarians can be found who already are dogmatically certain of that function and method. It is somewhat surprising to the author that a message smacking suspiciously of that old, traditional hostility of theologians to the investigation of religious problems should emanate from a seminary so progressive as the Union Theological Seminary. The writer even contemplates embodying the whole of Mr. Frame's review in his book as an interesting modern illustration of the survival in high places of a certain well-known attitude of mind that has sometimes characterized theologians in the ancient conflict of ecclesiasticism and science.

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SOCIETIES

SECTION OF ANTHROPOLOGY AND PSYCHOLOGY OF THE NEW YORK ACADEMY OF SCIENCES

A JOINT meeting with the New York Branch of the American Psychological Association occurred on February 22, 1909. An afternoon session was held in the Psychological Laboratory of Columbia University, and, after dinner at the Faculty Club of this university, an evening session was held at the American Museum of Natural History. The scientific program was as follows:

Professor Edward L. Thorndike, speaking on the "Correlation of Sensory Discrimination and Intellect," reported measurements of the relation of (1) the factor common to accuracy in drawing lines and making up weights, to (2) the factor common to efficiency in scholarship and ability to gain a high rating for intellect from fellow pupils and teachers. This was found to be, not 1.00, as stated by Spearman (1904), but between 0.17 and 0.30. Other facts were given contradicting that author's hypothesis that whatever community there is between mental functions is due to one same core of identity present in all.

Professor T. L. Bolton reported "Some Observations with the Tapping Test." These observations were made to determine the value of different lengths of rest between successive trials with the tapping apparatus, and also to discover the effect of different pauses upon the daily practise gain in a series of tests. Five trials at tapping were taken with five, ten, and twenty seconds rest between successive trials; both hands were used and the tests were continued for twelve to sixteen days with the three reagents and two classes of students of thirty each. The rest pauses for five successive trials were favorable to the amount of work in the order of twenty, ten, and five. The right hand responded more favorably than the left. The average daily gain was greater for trials with five seconds rest than for ten or twenty. The amount of practise gain seems to depend upon the amount of fatigue which the work engenders. The practise gain for the second half of the tests was greater than for the first half, which seems to mean that practise at first consists in overcoming the inhibiting effects of fatigue. The fact that the five-second rest shows a greater average daily gain than the ten or twenty would seem to indicate that in a long series the five seconds rest must prove the more favorable to work. When use is made of this test to make comparisons between high and low types of intellect and of normal with abnormal subjects, account must be taken of the degree of practise efficiency in which the normal class of subjects finds itself. Professor Kraepelin's proposition that comparisons must be made between the various rates of practise gain or loss seems to hold good. (These observations were taken and collated by Miss Batty, of the University of Nebraska.)

Professor Robert MacDougall presented a paper on "An Application of the Concept of Space Dimension to Experience in Time." Experience in time is sometimes illustrated by the form of one-dimensional space. The latter concept involves, directly or indirectly, such implications as motion in a right line; modification in the rate of such motion and reversibility in its direction; the determinateness of each point in the system, and continuity of direction

among all pairs of points. The paper was concerned with the development of some of the consequences which would follow from applying this spatial conception to human experience.

Free motion, projected in terms of time, would make any point of past or future realizable at will; while the conditions of a right line require that each intervening event find place in the series by which that point is reached. Modification of rate appears in intensive variations of experience as well as in primary acceleration or retardation. Reversal of direction calls for a change in the affective sign of experience. The conception of a right line requires a deterministic theory of conduct, but the relation of each new point to the direction of the preceding series represents the sense of inner consistency, or subjective free-will. The form of experience in time thus realizes, in part, the requirements of the spatial conception, but, in part, its order radically departs therefrom.

Professor D. S. Miller spoke on "The Knowledge of Temperament from Within and from Without." In every-day life there are two ways of alluding to a man's knowledge of himself; favorable and unfavorable. We say "only the man himself can answer that question,"—some question about his motives or thoughts; on the other hand, we say "that it would be well if a man could see himself as others see him." To these two attitudes there correspond a philosophical theory and a psychological theory. The philosophical theory is that in the case of consciousness, appearance and reality coincide: therefore everybody is by the nature of the case acquainted with the contents of his present consciousness. The psychological theory (set forth by Mr. Santayana) is that it is instinct and habit, the constitutional, which determines a man's action and forms his nature; that these can better be observed by the external spectator; that the play of consciousness matters little in comparison.

As regards all these it is clear that the philosophical theory is right. A man is acquainted with the contents of his consciousness. But the important thing in knowing his temperament is not what his consciousness is at any moment, but what further consciousness and what acts it will lead to. Thus a man is acquainted with his consciousness, but generally fails to "know himself."

As for the psychological theory, it can not be true that consciousness matters nothing, or even matters little. All consciousness is "impulsive," or motor. All consciousness is, therefore, a force toward action. Consciousness which is prevented by circumstances or stronger impulses from being realized is still a force, though a defeated and buried force. Were the circumstances changed or the paramount impulses altered, the defeated consciousness would have its way. Thus a person who knows his consciousness knows real

forces making for action. A person may also observe his own acts and life as truly as an external spectator may observe them.

The conclusion is, then, that as between the observer from within and the observer from without it is the inner observer who can see everything. The difficulty for him lies in the many false emphases of consciousness. It is a difficult art for the inner observer really to read the prognostic signs of his consciousness and acts. The advantage of the outer observer is in simplification; all the baffled forces are omitted from his view. But on that very account the outer observer lacks the full material for judgment. It is the inner observer who has them all, could he but master the art of reading the tokens correctly.

A discussion on the "Concept of a Sensation" was opened by Professor John Dewey, who distinguished the following meanings of the term:

1. The anatomical—for so it must be called—according to which the sense organ and its central connections are thought of as if dissected out, isolated from the rest of the system, and acting alone. The isolation is unreal; the activity of any part is interlinked with simultaneous activities in other parts, and preceding and following activities in the same and other parts. There is never a state of rest, which might serve to isolate the subsequent activity, but everything is really a process of readjustment throughout the system.

2. The physiological or biological conception of a sensori-motor reaction, as frequently stated, is subject to the same criticism: the reaction is not isolated, nor is the stimulus exclusively peripheral, for the existing condition of the central organs is part cause of the reaction, and this reaction helps determine the stimulus finally operative.

3. A sensation is often conceived in psychology as a "sensory quality," and these qualities are assumed to be primitive and to correspond with elementary processes in the sense organs. This is a good deal of an assumption, since the qualities are known to us only as the apex of a whole system of physiological functioning. We see the color of an object rather than the color itself; we do not start with the sensory qualities and build up the object by putting them together, but we begin with the object, and only reach the sensory quality by an elaborate process of differentiation. The sensory quality is a late achievement, not a primary datum. The "elements" of structural psychology are the last terms of intellectual discrimination.

4. The sensory qualities—as equivalent to Locke's simple ideas—are thought of as the units of knowledge, as the irreducible mini-

mum which can not be torn off by any amount of criticism of the percept. Locke, however, does not mean, nor would it be true, that all apparent knowledge is made up of single ideas. He was interested not in tracing the genetic psychology of knowledge, but in providing a logical device for testing knowledge and for appealing against prejudice, dogma, and authority. His sensations were not elements of composition, but ultimate, and hence elementary, criteria and tests of assurance.

5. The every-day use of the term sensation is illustrated by the phrase "sensational newspaper." Here the sensation is not an element, but a total concrete experience, the essential fact about which is that it is a shock, an interruption of an adjustment which had been running smoothly. While the "sensory qualities" are thoroughly objective, these shock experiences have the true subjective quality, since they have, for the instant, no meaning or objective reference. Their character as sensations is exhausted by this absence of reference; there is but one true sensory quality—the quality of shock. From the point of view of logic, the shock experience is valuable, since a state of suspended reference is the basis of the inductive method. Dogmatism, on the contrary, consists in the prompt interpretation of every new shock into terms of some well-established habit. In its true sense, the mental state, or the subjective, is the conscious starting-point of a qualitatively new habit.

Professor F. J. E. Woodbridge, in following up the discussion, first distinguished two meanings of the term sensation: (1) a reaction of the organism by means of the sense organs; and (2) the sensory qualities of objects. These meanings do not lead to confusion. The confusion arises when we pass to epistemology, and inquire into the relation between the sensation and the thing sensed. We first distinguish between the organism and its environment, and then ask at what particular point the sensation arises. We find it impossible to fix the point, and are driven to conclude either that there is no sensation, or that all is sensation—conclusions which virtually coincide, since they both leave no meaning to the term. It is clear from this that the term should be banished from epistemology and limited to the empirical uses mentioned above.

Professor W. P. Montague offered the following objections to the destructive criticisms of Professor Dewey. Though a sensation does not occur in isolation, yet every perceptual experience has a distinguishable sensory side. We have the same right to distinguish it as we have to distinguish the form and the color of objects, which also never occur in isolation from each other. There is this objection to regarding the sensory qualities as the apex of a long process of development: that, instead of being complex, they seem to be simple in

their nature and their external causes seem to be simple processes. It is likely that to simple processes in the external world should correspond simple effects in the organism, such correspondence being relatively independent of evolutionary development. It is also true that the shock experience arises very often from stimuli which are simple, so that there is reason for relating the experience of shock to the sensory qualities, as is done in the conventional use of the term sensation to cover both sorts of fact. The speaker also called attention to a metaphysically puzzling feature of sensation, namely, its "specious present," or seeming occupancy of a segment of past time at each moment of its existence; but this, he thought, was accounted for in the concept of sensation as a form of potential energy into which the kinetic energy of the neural current is transformed at the moment of its redirection in the central nervous system, or even at the moments of its transit through all the various synapses traversed by it.

Professor R. S. Woodworth advanced the concept of sensory as distinguished from perceptual centers in the cortex, the sensory centers being those which first received the incoming stimuli from the sense organs. According to this neurological conception, there should be a difference in time between the sensation and the percept, but it must be admitted that it is usually impossible to detect, introspectively, an interval between the first reception of the stimulus and the percept of some object, or process. This introspective difficulty has led Professor Pillsbury, in a recent and still unpublished lecture, to the conclusion that there is nothing in consciousness except meanings. From this point of view, it would be honest to give up the concept of sensation in psychology, and to speak simply of the stimulus and of the percept. Though these two would be sufficient for most instances of perception, there remain certain objections to giving up the concept of sensation altogether. There are the pathological cases, in which perception is lost, though sensation remains. There are the shock experiences, in which there is an interval between the first consciousness of the stimulus and the consciousness of its meaning. And there are ambiguous stimuli, like the staircase figure, where, in spite of the alternating percepts, there persists throughout the experience an irreducible conscious minimum, which may best be called sensation.

Professor T. L. Bolton inferred, from observations upon animals at certain moments, that they distinguish by their bodily attitudes and general conduct differences between the various objects of their environments that have practical bearings for their lives. The attitude assumed in the presence of the object is characteristic of the object. A similar phenomenon may be observed in human beings.

This is the fundamental fact in perception, which becomes the feeling of these bodily attitudes that are evoked by an object's presence. Again, we see both animals and human beings acting in the same manner upon objects alike in some respect, but very different in others. This likeness is the objective stimulus for, let us say, a sensation of color. Here then is an activity that is characteristic of the objective stimulus of sensation. This resolves the sensation into essentially the same thing as the perception. In the case of the conventional sensation, the stimulus is merely a part of the objective thing which is present and which, in its totality, might elicit an attitude of the kind which we have called perceptual. The sensation and perception both become the feelings of bodily conduct. In perception the whole object is effective in evoking the attitude. The difference is, then, one not in the mental effect, but rather in the part of the objective fact that is operative in exciting reactions. They are alike in being mental states of bodily changes, and neither is the direct effect of incoming afferent currents.

R. S. WOODWORTH,
Secretary.

REVIEWS AND ABSTRACTS OF LITERATURE

Einführung in die Philosophie. RAOUL RICHTER. Leipzig: B. G. Teubner, 1907. Pp. 128.

Six lectures on the problems of knowledge, reality, and religious and ethical value make up this little book. Of these lectures, the first deals with the nature of philosophy; the second, with the concept of knowledge, and the third, with its object, degrees, and limits; the fourth treats of the metaphysical nature of reality, and the fifth, of its final unity; the sixth examines the nature of religious and ethical value.

In general the author stands for the sharp separation and mutual independence of knowledge and value, for the priority of epistemology, for the idealistic nature of reality and pantheism as the expression of its final unity, and for the individual as the source of determination of all values.

Philosophy is a struggle, no final attainment. It is a struggle after knowledge, the knowledge of the real, whether factual merely or worthful. Its test is satisfaction of the demands of the intellect, not of heart and feeling. The knowledge it seeks is that of the total system of reality. It is neither a mechanical summary of the various sciences nor a substitute for any or all of them. The business of philosophy is critically to examine the presuppositions of the various sciences, and on the basis of their special laws to discover the universal. Religion is to be distinguished from philosophy in that the former is the reaction of feeling and will to the total system of reality as revealed by the latter. But the

world-view does not necessarily determine the world-evaluation. Were our knowing functions freed from their limitations, there would be but one philosophy, but there would probably be many reactions, many religious attitudes, to the nature of reality so revealed.

A criticism of knowledge must be undertaken before the knowing functions are applied to the problem of the ultimate nature of reality. Philosophy deals with the fundamental assumptions and most general results of the special sciences. As stated, these are in most cases shot through with unrecognized, false, or half-true assumptions regarding the nature of knowledge and the knowing functions. Furthermore, the object with which philosophy deals is no less than the total system of reality. The fundamental disagreement between philosophers as to central problems shows that there must be limitations in our knowing functions in reference to such an object.

The term "truth" is applicable not to mere existents, whether physical or mental, not to isolated or connected contents, but to the connection of mental contents as established in the judging process of a conscious individual. The marks of a true judging process are: the feeling of conviction, harmony with thought and experience, self-conscious clearness of the connection of the mental contents and of their harmony with thought and experience, and the agreement of all subjects. Since the existence of other conscious subjects besides the judging consciousness is neither a matter of immediate experience nor a thought necessity of that judging consciousness, the last point strictly reduces to a special case of the second, harmony with experience, reference being made to that portion of experience usually designated as expressions of assent from others.

Richter takes as illustrations of true judgments the propositions of formal logic and mathematics, which he calls subjective, and statements of immediate experience, such as "in this room a light is burning" and "I trace pleasure on the faces of the audience," which he calls objective.

Judgments as to causal connections within experience, such as that acid turns litmus paper red, have only probability, not truth, and command a lower grade of conviction. A third and still lower degree of knowledge and belief accrues to judgments concerning that which is by nature beyond experience, *e. g.*, the ultimate nature of the litmus paper when unperceived.

The judgments of mathematics and logic are mutually characterized by the inconceivability of the opposite and by absolute universality. They are distinguished in that the former are "synthetic" and the latter merely "analytic." Richter has emphasized the necessity of taking judgment as a process, but one wonders how significant that emphasis may be when the "process" may typically consist of the mere repetition of the subject in the predicate. If a live judging process be intended and if by "harmony with thought" a reference to other judging processes be involved, it would seem that causation would be necessarily implicated in the process. If an experience be one thing and the judgment about it another, there would seem to be room for error, and the test of

"harmony with experience" would involve, again, the belief in causation and a reference to a series of checks. On the above assumptions, the absolute rigidity of the distinction between the first two classes would thus be in question. Otherwise, the first class would seem to approach the vanishing-point and hardly deserve to be taken as representative of the meaning of the term truth.

Truth involves a judging process, an event in time, but a judgment once true is always true. If it is once in harmony with thought and experience, according to Richter, it can never be contradicted by either. The growth of knowledge affects error only, not truth. Truth is not a matter of connection between conscious experience and something outside of it. It is relative to the conscious subject and has to do with relations within his experience, but, as said above, the true connection once formed is eternal. If "harmony with thought and experience" includes harmony with all future thought and experience, this absolute truth within experience would not seem to possess surpassing advantage over the absolute truth of the supra-experiential type.

The third and lowest type of knowledge and belief has to do, as stated above, with the existence and nature of the noumenal, or extra-experiential world, nature, God, the soul. Proof of the existence of the object or of its non-existence is impossible here. The tests are consistency with thought, lack of inconsistency with experience, positive explanation of experience by assumptions as simple as possible and as closely related to experience as possible.

Are there objects corresponding to my sense-perceptions and independent of them? Are such objects themselves inner experiences, or not? Precisely what is their real nature? For extreme realism independent objects exist, and their nature is exactly what it appears to be in sense-perception. For extreme idealism there are no independent objects. For moderate realism independent objects exist, but only with the temporo-spatial, not the qualitative characteristics of our sense experience. For moderate idealism independent objects exist, but they are either of the nature of our inner experience or of an inexperienceable nature. In criticism of this division one might suggest that it would be simpler to divide first on the basis of independence of the given sense experience, and then as to the nature of the object. Closely connected with this question of the object in sense perception is that of the nature of the ultimate elements of reality. As Richter treats this problem, the actual division is made not so much on the basis of content as of causality. Materialism reduces consciousness to a form or function of matter. Spiritualism looks upon matter as a product of thought. Dualism recognizes them as of coordinate character, and monism, neutralism, views them as expressions of a higher and single nature. The four forms of philosophy just mentioned are realistic. On the idealistic basis there are three forms: solipsism, polypsychism and panpsychism.

On the basis of lack of harmony with thought or with experience, or of lack of simplicity, or of close analogy with experience, Richter eliminates

the first six of these solutions and chooses panpsychism as the least objectionable. Sense-perceptions arise from the interaction of conscious subjects. The body is one psychical unity, the soul another. The soul is not a substance, but a symphony of processes, and of "inner" rather than "outer" experiences. If no hard and fast line can be drawn between "inner" and "outer" experience, it is difficult to see how interactions of two or more systems of inner experiences suffice to produce sense-perception. Richter gives no criterion for individuality in sense-perception.

For Richter, no philosophic sin is greater than to allow one's own heart's demands or those of the race to influence the results of our thinking, and yet he comes out strongly for voluntarism. The primacy of will and feelings over intellect is not merely a mattter of temporal origin, but of actual relationship. Will and feeling make use of intellect merely as a tool in carrying out their purposes. Richter gives no discussion of this apparent conflict, nor any detailed analysis of the intimate relations of these processes in concrete cases. In practise, the work of the will seems to consist in setting the intellectual processes to work *en bloc* and then in reacting in some way to the final product, not in any sense determining it.

The stuff or reality is, then, consciousness, and the latter is essentially of a volitional character. Two questions concerning its nature remain. What sort of laws does this material exhibit in its behavior, mechanical or teleological? Is there an ultimate unity, and, if so, what is its nature? The question concerning the laws is not discussed. Atheism, theism, and pantheism are the possible solutions of the second question. The existence of God is given neither as a matter of thought necessity nor as a fact of experience. It is a metaphysical problem. In his discussion of pantheism, Richter recognizes as one form of it the view that God is an unfinished, developing organism in whose upbuilding we may have a part. He includes under atheism the view of the world as an unending evolution or ascent into higher forms, but without a final aim toward which the process is directed. Apparently, then, in the form of pantheism mentioned, the aim is already laid down, and the growth process is merely one of accretion. It would appear also that some forms of pragmatism would be classed as atheism on this basis. Richter adopts as his own view a form of pantheism in which God, the final unity, is conceived not as the totality of things, complete or incomplete, nor as a giant organism, but as the eternally upspringing source of all that exists. "Gott . . . ist nicht Umkreis, sondern Mittelpunkt in der Wirklichkeit." This, then, seems to be a qualitative rather than a quantitative matter after all, and if so, one questions why no room should be found for God within experience.

Value is a matter of volition or feeling, and so presupposes a conscious subject. Religious and ethical values are found in volitional reactions to the presented object. Religious valuation is this reaction directed at the final unity of things, whereas ethical valuation is concerned with the minor phases of reality. There is no universality in either ends or means. The only universal thing is that, if the end is willed, the means must be

also. The ethical situation consists in a conflict of our deep-lying and our superficial wills or natures. The practical problem is to avoid mere imitations, to find out our true nature and let it be dominant.

Schopenhauer and Nietzsche bear witness to the fact that religious attitudes, optimism, and pessimism, are not mechanically determined by metaphysical views, but are matters of individual reaction.

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Nicolas de Béguelin. Fragment de l'histoire des idées philosophiques en Allemagne dans la seconde moitié du XVIII^me^ siècle. PAUL DUMONT. Paris: Felix Alcan. 1908. Pp. 210.

Nicolas de Béguelin is one of the minor philosophers of the uninteresting period which extended from 1754, the year of Wolff's death, until 1781, the year of the publication of the "Critique of Pure Reason." He was born in 1714, in Courtelary, French Switzerland, but spent his life as a scholar in Berlin; there, with Merian and Sulzer (the esthetician) he formed the Swiss trio famous in the annals of the Académie Royale de Berlin at that time. His independence of character brought about some trouble with Frederic the Great; still, at the end of his life he reached the honorable position of "Directeur de la classe de philosophie" of the Académie. He wrote no large work, but a great number of *mémoires,* all published in the *Annales of the Académie* between 1750 and 1787. He was somewhat of a poet. He did his most solid research work in the domains of mathematics and physics (d'Alembert spoke highly of him), and his most original work in the domain of metaphysics.

His philosophy is inspired chiefly by Leibnitz, Wolff, Newton, Locke and Reid.

He was a man of extremely peaceful disposition in his thought; whatever originality is found in his writings is in his attempts to conciliate the dissenting views of the above-named philosophers.

The author of the book under consideration, M. Dumont (1908), has very conscientiously reflected those various attempts. One might wish that he had been, perhaps, less exclusively objective, and that he had pointed out of what interest the ideas of such a man as Béguelin can be for the student of the history of philosophy. Béguelin treats almost everything from a metaphysical standpoint, and we have seldom been given the occasion to realize so well the remarkable advance which was made possible in philosophy, thanks to the work of Hume and Kant; the vanity of old-time metaphysics appears here so evident that no better object-lesson could be offered to a student than a few examples from the philosophy of which Béguelin is so typical a representative. For instance, the problem was to reconcile the theories of the Newtonians, who believed in the existence of a vacuum in space, and of Leibnitz, who did not. Béguelin agreed that in discussing the problem on the grounds of physics both had such strong arguments in their favor that nothing could be done to bring about a reconciliation; but on metaphysical grounds he thought the case was not so hopeless. The Newtonions admitted the exist-

ence of a vacuum in the universe, because their reason could not conceive of the possibility of motion in *plenum;* while Leibnitz thought that the principle of sufficient reason required the non-existence of a vacuum. Now Béguelin simply proposes to distinguish between a physical vacuum and a metaphysical vacuum; both Leibnitz and Newton could accept the existence of a physical vacuum; at the same time both Newton and Leibnitz could agree that a metaphysical vacuum could not exist, as contrary to God's "loi suprême de convenance"; thus, the vacuum (physical) exists, and the vacuum (metaphysical) does not exist.

The whole philosophy of Béguelin practically consists of such "conciliations." Whether, in physics, he discusses the true cause of weight, impulsion according to Leibnitz, attraction according to Newton (p. 56); or whether the origin of motion is emission, according to Newton, or pression and undulation, according to Leibnitz; or whether, taking up logic, he arbitrates between the same two men as to the essence and bearing of the principle of sufficient reason (p. 71), or between Leibnitz and Locke as to the empirical or innate origin of the same principle of sufficient reason (pp. 75–8), or between Leibnitz, the determinist according to the theory of the "monads," and Leibnitz, the free-willist according to the "Théodicée" (pp. 82, 118); or, again, when he proposes his own theory of the "unités de la nature" to mediate between the cosmology of Wolff, with his physical "*atomi naturæ*" leading to a dualism of matter and mind, and that of Leibnitz, who, with his "monadology," divides matter *ad infinitum* into forces that are neither physical nor spiritual (p. 101) (not to speak of the questions directly and indirectly related to that one, as "apperception" or "appetition"); or whether the problem before him is the difference between human and animal mind (p. 117) or the relations of body and mind, Leibnitz proposing preestablished harmony, and Wolff maintaining that there is interaction, while Béguelin suggests that, matter and mind being not "essentially" different, there is no real problem to solve (p. 122); or whether the source of our knowledge is inneity (Leibnitz), or sensation (Locke); or, finally, when he takes up the discussion of the agreement between reason and faith (pp. 130 ff.), between free will and divine prescience (p. 130), between morality of duty (Leibnitz) and morality of happiness, or eudaimonism (Locke) (pp. 144 ff.)—it is always and ever the same tendency to make every one agree with everybody else. He believes with Leibnitz: "les systèmes ont raison dans ce qu'ils affirment, et tort dans ce qu'ils nient." Even in his methods, Béguelin is in turn favorable to aprioristic methods and to empirical methods; although, in the latter case, he shows always fear of losing contact with metaphysics. Reid's theories of "common sense" constitute for him a most valuable instrument in his generous effort to conciliate everything; and when it comes to reconciling the data of common sense with those of pure reason, Béguelin formulates philosophical principles which bear a very striking resemblance to those of modern pragmatists. Whoever is interested in pragmatism ought to read pages 94 and 98 of Dumont's book.

Nothing shows better than this need of adaptation and mediation and reconciliation everywhere, how shaky the whole edifice of philosophy was at that time, and how circumstances called imperatively for a man who would start thinkers on a new path: Kant.

The chapter on the relations of Béguelin with the principal men of the Académie Royale of Berlin is neither very interesting nor very important, but that on Béguelin and Kant is the one which shows best the critical abilities of Dumont.

In fine, I should say that the book is by no means worthless. Béguelin's philosophy has hardly much value in itself, but as illustrating the spirit of a period it is worth studying. A small philosopher reflects just as faithfully as a great thinker his own time; only he reflects it more naïvely.

ALBERT SCHINZ

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The Limits of Educability in Paramecium. STEVENSON SMITH. *The Journal of Comparative Neurology and Psychology,* 1908, Vol. XVIII., No. 5.

Students of comparative psychology will welcome this excellent piece of experimentation as a real contribution to the field of adaptive behavior of microorganisms. It is argued here that careful animal studies reveal an adaptive phylogenetic development from unicellular organisms upwards without involving consciousness in the description. Even memory, which has been held by some to be a conscious adaptation, may involve no consciousness whatever, even though it may possess for the organism strong selective qualities. Inorganic manifolds portray some of the same memory characters that we find in the organic.

An adaptive behavior in organisms must develop of necessity if the ordinary laws of evolution are granted. It is true that we have memory here, but there is no evidence that it is conscious.

The criterion of consciousness assumed by Morgan and others, namely, that the organism shall be able to profit by past experience, is rejected by Professor Smith as being inadequate on the ground that much profit by experience in man is not at all a conscious adaptation. For example, muscular adaptation which is profitable to new conditions does not make the muscle a "conscious mechanism," but is simply the establishment in it of more ready reactive tendencies. Aside from the development of facility, there is the acquirement of selective movements by animals. This may be explained by the selection of overproduced movements, and the author offers a formula describing this selection in terms of chance and habit.

The teleological aspect of vital reactions has led some speculators to fix upon regulation as the criterion of consciousness, involving, as it usually does, choice of conditions. But upon analysis it is shown that "we may call behavior regulatory when a process having proceeded too far is the cause of its own remedy." In demonstration of this, certain examples are given of regulation in the field of inorganic manifolds. The regulation of living things differs from inorganic self-regulatory actions

in that after the action is completed, the reversion to the normal state in the former is more perfect, which renders the organism ready at once for a fresh corrective adaptation, should the need arise. This definition becomes at once a contribution, as the outline of an adequate description of regulatory behavior is suggested which involves no super-organic terms.

The experiments cited in this paper were made upon paramecium to determine the character of the modifiability of action when recurring stimuli of the same kind were given. They fall into three groups: (1) Those in which the animal was stimulated by touch (the meniscus of a capillary tube), the conditions being such that it could react in but two ways in order to escape. (2) Those in which the animal was stimulated by change in temperature. (3) Those in which the animal was frequently made to experience two conditions, which at first occurred simultaneously, and later made to experience one alone, any difference being noted between the reactions to the first and the second conditions.

These experiments seem to have been performed with great care and accuracy. In the first experiment the animal was placed in a capillary tube of a bore less than the length of the paramecium and greater than its width. In time the animal acquires the ability to twist around and to reverse its direction in the tube. This aptitude, under optimum conditions, progresses until the paramecium may reduce the time for making the turn from four or five minutes to a couple of seconds. The second and third groups of experiments, which were performed as a test for associative memory, gave entirely negative results.

In conclusion the author says: "Paramecium is educable in that its behavior may be modified to show the results of practise, both in a reduction of the time involved in performing a movement and in the increase in suitability of the movement to accomplish the appropriate result. In so far as the above tests apply, there is no evidence of associative memory in paramecium. The reversing movement above described is in the nature of a positive reaction."

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. March, 1909. *Naturalisme, humanisme et philosophie des valeurs* (pp. 225–255): A. CHIAPPELLI. – Modern philosophy exhibits a great Idealistic regeneration in which philosophy is differentiating itself from science, not by degree of generality, but by a difference of its object—an historical conception of universal nature, at once ideal and evaluative. *L'antipathie dans ses rapports avec le charactère* (pp. 156–275): L. DUGAS. – A development of Ribot's idea that antipathy is a form of the instinct of self-preservation. *L'idée de dieu et le principe d'assimilation intellectuelle* pp. (276–284): A. LALANDE. – A criticism of a paper by M. Belot on *La triple origine de l'idée de dieu* in the December number of this JOURNAL. *Revue générale. Philosophie du*

Droit: la contrainte sociale et la valeur du droit subjectif, G. RICHARD. *Notices bibliographiques.* H. Maier, *Psychologie des émotionalen Denkens:* M. SOLOVINE. H. Marty, *Untersuchungen zur Grundlegung der Grammatik:* B. BOURDON. Urban, *The Application of Statistical Methods to Psychophysics:* B. BOURDON. Ossip Lourié, *Croyance religieuse et croyance intellectuelle:* L. ARRÉAT. Benett, *The Ethical Aspects of Evolution:* G.-L. DUPRAT. Schlesinger, *Der Begriff des Ideals:* L. ARRÉAT. Pascal, *Œuvres complètes, t. II et III:* L. ARRÉAT. Rzewuski, *L'optimisme de Schopenhauer:* L. ARRÉAT. Kowalewski, *Schopenhauer und seine Weltanschauung:* L. ARRÉAT. Schelling, *Werke:* J. SEGOND. Schelling. *Sistema dell' idealismo transcendentale:* J. SEGOND. *Revue des périodiques.*

Bohn, Georges. *La Naissance de l'Intelligence.* Paris: Ernest Flammarion. 1909. Pp. 345.

Cooley, Charles Horton. *Social Organization: A Study of the Larger Mind.* New York: Charles Scribner's Sons. 1909. Pp. xvii + 419.

Mumford, Eben. *The Origins of Leadership.* Chicago: The University Press. 1909. Pp. 87. $0.54.

NOTES AND NEWS

THE following obituary notice of James Hutchinson Stirling is from *The London Times:* "Serious students of philosophy and the philosophical aspects of theology will learn with regret of the death from acute pneumonia of the veteran metaphysician Dr. James Hutchinson Stirling, which occurred at his residence at Trinity, near Edinburgh yesterday morning. He had been in failing health for some time, but his mind remained clear to the end. About six weeks ago he was visited by Emeritus-Professor Campbell Fraser, who is now in his ninetieth year. Born in Glasgow on June 22, 1820, he began to attend the winter classes at Glasgow University in 1833, and completed the course in arts and medicine in 1842, in which year he became a licentiate of the Royal College of Surgeons, Edinburgh. He early showed a remarkable aptitude for logical and metaphysical inquiries, and in 1838, at the suggestion of the moral philosophy professor, Dr. Fleming, made trial of his critical powers by a thesis in examination of St. Anselm's *a priori* argument for theism, which he had then no hesitation in pronouncing a mere sophism, though he lived to regard it as 'the first word of modern philosophy.' He also distinguished himself in chemistry and dabbled in literature. In 1842 he sent one of his poems to Carlyle, who dipped into it here and there, pronounced it unpublishable, and advised him to stick to medicine. For some years he followed the advice, settling in 1843 at Hirwain, Glamorganshire, whence he removed to Glyn Neath, in the same county. Meanwhile he contributed a few trifles in prose and verse to *Douglas Jerrold's Magazine, Leigh Hunt's Journal,* and other periodicals. These fugitive pieces, which attest the soundness of Carlyle's judgment, appeared in collective form, with an

imaginary dialogue in which Burns is the chief speaker, under the title 'Burns in Drama, together with Saved Leaves,' Edinburgh, 1878, 8vo. In 1851 Stirling retired from practise and went abroad. For nearly two years he resided in Paris, studying chemistry under Dumas, toxicology under Orfila, physiology under Milne Edwards, and French literature under Ampère. Migrating to Germany about 1854, he devoted himself to the serious study of transcendentalism, particularly of Kant and Hegel. He resided at Heidelberg, and attended the lectures of Schenkel, but formed independent philosophical views. He also visited Bonn and Stuttgart, and returned to this country in 1857. Having, as he believed, penetrated into the inmost spirit of the Hegelian philosophy, and seen the idea rise from the Kantian categories like Venus from the sea, Stirling desired his countrymen to share the same august vision. He settled accordingly in Edinburgh, and, while engaged in casting the results of his German studies into shape, submitted the philosophy of Sir William Hamilton, which then lay like an incubus on the North British mind, to the critical scalpel. The result was a volume of strictures, no less damaging than those of John Stuart Mill, and published in the same year (1865) under the title 'Sir William Hamilton; being the Philosophy of Perception, an Analysis' (London, 8vo). His principal work, also published in 1865, 'The Secret of Hegel' (London, two vols., 8vo), hardly fulfilled the promise of the title, but did much to correct prevalent misconceptions. (A new edition came out in 1898.) It was followed in 1881 by one which should in logic have preceded it—viz., 'Text-book to Kant: The Critique of Pure Reason' (Edinburgh, 8vo)—a work intended to exhibit the affiliation of the Hegelian to the Kantian system, and condensing the results of many years of intense study. The value of both works is seriously impaired by the uncouth mannerism of their style. In 1889–90 Stirling delivered the first course of lectures in Edinburgh on the Gifford Foundation, in which, with much discursiveness and multifarious learning, not all of it relevant, he weighed the arguments for and against theism. They were published under the title 'Philosophy and Theology' (Edinburgh, 1890, 8vo). In 1894 appeared his 'Darwinianism: Workmen and Work' (Edinburgh, 8vo), an investigation into the origin of the 'Origin of Species.' Stirling also translated and annotated a valuable text-book —Schwegler's 'History of Philosophy'—of which a twelfth edition appeared in 1893, and published, among other lectures, a course on 'The Philosophy of Law,' delivered before the Juridical Society of Edinburgh in November, 1871. His latest published volumes were: 'What is Thought, or The Problem of Philosophy: by way of a General Conclusion so far,' 1900; and 'The Categories,' 1903. The University of Edinburgh conferred upon Stirling the degree of LL.D. in 1867, and the Philosophical Society of Berlin elected him a foreign member in 1872. He was also created later an honorary LL.D. of Glasgow University. He stood for the chair of Moral Philosophy at Edinburgh in 1868, and is said never to have quite forgiven the university for preferring Dr. Calderwood. In politics he was a strong Tory; in theology his views were supposed to be broad, but he always considered himself a member of the Kirk, and maintained

the incompatibility of the Christian faith with the Hegelian philosophy. He was an omnivorous reader and a precocious conversationalist."

THE Association of Teachers of Psychology in the Colleges and Normal School of the North Central States met on April 3 at the University of Chicago, with the following program: "Simplifying the Introductory Course in Psychology": Rowland Haynes; "The Value of Psychology to the Teacher": Miss Hazel Ackley; "The Course in Psychology for the Rural Teacher": Mrs. L. Pitmann; "Teaching the Organic Conception in the Introductory Course": J. B. Miner; "A Device by which Physiological Concepts may be Employed in Teaching Psychological Processes": N. A. Harvey; "Conflicting Ideals in the Teaching of Psychology": James Rowland Angell; "The Written Recitation and the Participating Demonstration": Carl E. Seashore; "Relearning an Act of Skill": Edgar James Swift; "Art and Conduct": Miss Kate Gordon; "The Value of Social Psychology": E. L. Talbert; "Elementary Psychology and the Elementary Teacher": Walter S. Athearn; "A Course of Applied Psychology for School Teachers": Frank C. Bruner; "Social Psychology": Charles H. Judd.

THE *Popular Science Monthly* for April is devoted entirely to Darwin. The contents are as follows: "Life and Works of Darwin": Dr. Henry Fairfield Osborn; "The Individuality of Charles Darwin": Charles F. Cox; "Darwin and Geology": Professor John James Stevenson; "Darwin and Botany": Dr. Nathaniel Lord Britton; "Darwin and Zoology": Dr. Herman C. Bumpus; "For Darwin": Professor T. H. Morgan; "Predarwinian and Postdarwinian Biology": Professor William Morton Wheeler; "The Halo of a Hundred Years": Professor R. M. Wenley; "The Origin of the Theory of Natural Selection": Dr. Alfred Russell Wallace; "The First Presentation of the Theory of Natural Selection": Sir Joseph Hooker; "The Progress of Science": Darwin Manuscripts: Portraits of Darwin: Celebrations in Honor of Darwin.

RUDOLF EUCKEN'S "*Die Lebensanschauungen der grossen Denker*," etc., will shortly appear in English translation under the title "The Problem of Human Life as Viewed by the Great Thinkers from Plato to the Present Time." The translators are Professor Williston S. Hough, of The George Washington University, and W. R. Boyce Gibson, of the University of London. Professor Eucken was awarded the Nobel Prize for Literature last year, and the above work is his best known and most popular book.

THE Oxford University Press announces for spring publication Hobbes's "Leviathan," edited by W. G. Pogson Smith; "Plato's Theory of Ideas," by J. A. Stewart; "Theophrastus," edited by H. Diels; and "Aristotle's Criticism of Plato," by J. M. Watson.

PROFESSOR SIMON SOMERVILLE LAURIE, of the University of Edinburgh, died on March 2, at the age of seventy-nine years. Professor Laurie was known for his writing in the fields both of education and of general philosophy.

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THE JOURNAL OF PHILOSOPHY
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EXPERIENCE AND ITS INNER DUPLICITY

IT has been suggested that were "the use of the term consciousness to be forbidden for a season, contemporary thought would be set the wholesome task of discovering more definite terms with which to replace it, and a very considerable amount of convenient mystery would be dissipated."[1] But surely "consciousness" should not be asked to rusticate alone when "experience" has been its partner in all the pranks it has played.[2] Indeed, it is much to be feared that Professor Perry's disciplinary zeal, if allowed full swing and consistent indulgence, would leave the halls of philosophy silent. At any rate, it would be very interesting to observe the results of such an experiment; but some of us might prefer to have it tried at a distance, say in New Zealand, before adopting it ourselves. Meanwhile, however, it would be worth our while to set ourselves the task of discovering and identifying the facts that our philosophical terms should severally designate, rather than forswear the use of these terms altogether. In this paper I shall attempt to state the results of my efforts to ascertain what experience is, and whether within experience there is anything entitled to the name consciousness.

It is notoriously difficult to get a satisfactory starting-point in philosophy. Almost any statement that one philosopher may lay down as self-evident and therefore qualified to furnish a basis for a philosophical system is challenged by some fellow philosopher. I shall, therefore, not seek to build on any self-evident principle. I shall merely begin with what seems to be a universally conceded fact. Every intelligent being acknowledges, at least occasionally, that at any and every moment of what he calls his experience there are many things lying beyond his experience. The only alleged exceptions to this gratifying unanimity of belief are solipsists and absolutes, and without raising the question whether there are any such beings and whether if there are they are intelligent, I propose in this dis-

[1] Professor Perry, *Psychological Review*, Vol. 11, p. 282.

[2] Professor Dewey, this JOURNAL, Vol. VI., p. 21: "Again, would not a 'clear and unambiguous' definition of experience be both a boon in general and a prerequisite to a clear and unambiguous answer to the question asked?"

cussion to leave such problematic personages out of account.[3] I do this because, so far as solipsists are concerned, tit for tat is fair play; while, as regards absolutes, they have never seen fit to speak for themselves in philosophical matters, and second-hand information about absolute experience is hardly satisfactory as a basis for the scientific study of actual experience. Solipsists and absolutes apart, then, the rest of us who show any interest in philosophical questions treat our respective experiences as if they were carved out of a larger, more comprehensive world of things. Not only is it true that the material objects in any one's field of vision are treated by us as being "a collection of physical things cut out from an environing world of other physical things with which these physical things have actual or potential relations";[4] even what in our experience we call mental is treated by us as being only a part of a larger world of mental and physical things, and as having actual or potential relations to some of these other mental and physical things. In other words, the physical and the mental things of our several experiences are considered by each of us as selections, choice samples from reality's inexhaustible store—only a measure of sliding sand from under the feet of the years. When it comes to the making of reality, some things are taken and others are left.

> Yet all experience is an arch wherethrough
> Gleams that untraveled world whose margin fades
> For ever and for ever when I move.

Now, as I understand it, the problem of defining experience is the problem of identifying the nature of this arch through which vistas open, but which at the same time shuts out the greater part of the panorama. Or, to make my position clearer by antithesis, I should say that what is meant by experience can never be ascertained by saying lo here, and lo there, meanwhile always pointing to experienced *things*. That experience is a concrete something, will

[3] Sometimes believers in the Absolute speak as if they had acquired from their Absolute the habit of actually denying the existence of anything beyond their experience. For instance, Professor Royce writes: "*Ignorance always means inattention to details,*" and the context seems to imply that the details neglected by attention "though lost in the background of consciousness" are nevertheless "present" ("The World and the Individual," Vol. II., p. 57). But in other parts of his work he makes it clear that the things of which he is ignorant are not actually present in his consciousness in any other way than as involved in the "internal meaning" of his ideas. His Gifford Lectures, in fact, are full of most emphatic assertions of the "fragmentariness" of finite experiences. By such assertions he of course places himself, as contrasted with his Absolute, sociably along with the rest of us in believing that our experiences are not all-comprehensive.

[4] Professor James, this JOURNAL, Vol. I., p. 481.

appear from the sequel to be my view; and, as concrete, experience is of course not capable of being defined without reference to the things experienced. But things and sensible natures and what-not must be experienced before they can be used to define experience, because experience is constituted by the fact that these things and these sensible natures are experienced. The question then is, What is meant by "being experienced"?

When anything is experienced it is in a unique kind of togetherness with certain other things.[5] Now things are together with each other in all kinds of ways: they may be together in the same part of space or at the same moment of time or even in the same genus, or family, or order, as when we say that whales belong together with land mammals and not with fishes. Professor James has enumerated some of these different ways of togetherness in his article "A World of Pure Experience,"[6] where he calls them conjunctive relations, and he has duly stressed the truth that these kinds of togetherness are as much facts as the things that are together in these different ways,[7] and also that each of these conjunctive relations must be

[5] The term "thing" is here used in a very inclusive sense. For instance, it denotes space, flatness, brownness, heaviness, and what not (James, JOURNAL, Vol. I., p. 487). It denotes these things whether the psychologist would subclassify them as percepts or as images. It denotes also emotions, pleasantness, volition, and anything else that may be mentioned either in psychology or in the physical sciences, provided these things are together in the unique way referred to in the text. The only exception to this inclusiveness of denotation is to be found in what I have called "a unique kind of togetherness"; or, to use more familiar phraseology, thing here may be anything except the thing called experiencing. While the term includes "idea" and thus my account of experience in this paper is intended to refer to ideational as well as to perceptual experience, it will be seen that the nature of ideational experience as distinct from perceptual experience is not discussed here. I hope to take that matter up before long; meanwhile I may only say rather dogmatically that in ideational experience the idea is experienced, but not the object of the idea. The idea, therefore, is in this case one of the things united in experiential togetherness. I wish to add here that I have tried to make clear by my formulation the fact that experiencing is a temporal event. The expression "experienced" is extremely ambiguous: it may be applied to things which have been; but no longer are experienced, and even to things which have never been, but presumably may be experienced in the future. I think it makes for clearness to recognize that a thing is *not* experienced when it *is* not experienced, even though it may have been or may in future be experienced.

[6] JOURNAL, Vol. I., pp. 535 ff.

[7] However, in the article referred to, I fail to find any explicit mention of the unique kind of togetherness which, obtaining between things, makes them into experienced things. There is indeed one passage in a preceding article where he implies that to be experienced is to be together with other things in experience: "Here as elsewhere the relations are of course *experienced*

"taken at its face value, neither less nor more." Now the experiential togetherness of which I am speaking is entirely distinct from any and all of the conjunctive relations he registers. Its uniqueness becomes evident when we try to define it merely in terms of some of these conjunctive relations. If we should say that experiential togetherness is a local affair we should find it difficult to reconcile this statement with the fact that not all the things locally together within some definite limits are together in any verifiable experience at any one time. It is quite true that to a certain extent, or rather in a certain sense, experiential togetherness is a matter of spatial metes and bounds. If you are in New York City you can not immediately experience the ruins of Messina and Reggio or the Falls of Niagara. Without turning your head you can not see even what is in your immediate neighborhood behind your back. In this sense the limitations of experience, that is to say, its exclusions and its inclusions, are geographical. Your field of experience is only a part of the indefinite range of space. But even within that part of space which lies within your experience there is we know not how much that is not experienced. The microscope brings some of the occupants of this region within your experiential reach, although in doing this it does not of course necessarily bring them into any part of space: they may have been there already. Now if experiential togetherness were the same as spatial togetherness, all things spatially together would also be experientially together, and things not spatially together would not be experientially together. Such, of course, is not the case; so we may confidently say that to be experienced does not mean to be spatially together or to be with certain other things within certain geometrical limits, although what is experientially together with something else may also be spatially together with that something.

Neither is experiential togetherness to be identified with temporal togetherness. The very same time within which the things of my experience are occurring may also contain many other things not in my experience. In other words, things may be synchronous without being experientially together. In the same way in which I have shown the distinction between experiential togetherness on the one hand and spatial and temporal togetherness on the other hand, I could go on to show that experiential togetherness is distinct from any and every other kind of togetherness which has been recognized

relations, members of the same originally chaotic manifold of non-perceptual experience of which the related terms are parts" (JOURNAL, Vol. I., p. 483, foot-note). But neither in the context of this statement nor elsewhere, so far as I can discover, has Professor James developed the thought implied in this definition of "experienced."

and classified as a relation.[8] None of the relations, whether they be taken singly or together in any other way of togetherness than the experiential way, can make themselves into experience; and, in like manner, no quality or combination of qualities except the combination which is experiential togetherness can turn itself into an experience. Even any cooperation of qualities and relations would prove ineffectual for this purpose unless the cooperation were the peculiar kind of cooperation that I have called experiential togtherness. Qualities and relations in a conspiracy of a peculiar kind, from the charmed circle of which other qualities and relations are for the time at least excluded—this and all this is what any experience is. It is as absurdly inadequate to attempt to describe experience and leave out the experiential confederacy in which the contents of experience are banded together, as it was for Hume to attempt to describe extension as a collocation of *minima sensibilia* without recognizing the peculiarity of the kind of collocation concerned. If the truth of associationism and the mind-dust theory would mean "the general pulverization of all Experience,"[9] because their truth would involve the non-existence of relational factors in experience, so the truth of any radical empiricism which should decline to recognize this experiential togetherness as *sui generis* and as the supreme integrating factor of experience would mean that there is no experience to base empiricism upon.

When, however, this experiential togetherness is spoken of as the supreme integrating factor of experience, it is not meant that it exists as a thing apart, supervening from some transcendental Utopia upon the things it integrates. What is meant is something comparable with what Professor James means when he speaks of relations as uniting terms,[10] or of one experience supervening upon another.[11] What supervenes and in supervening unites other things is not a preexistent entity. In fact it is not an entity at all, if by this

[8] This statement differentiates the view here advocated from that which Professor Woodbridge has published: according to Professor Woodbridge's view, to be experienced, or, at least, to be the object of consciousness, is to be in the relation of meaning. According to my view, meaning is one of the many relations experienced; it stands in the same relation to experience as does any other object of experience, and is thus to be distinguished from what I have called experiential togetherness.

[9] JOURNAL, Vol. I., p. 534.

[10] "Radical empiricism takes conjunctive relations at their face value, holding them to be as real as the terms *united by them*" (JOURNAL, Vol. II., p. 35; italics are mine).

[11] "To be conscious means not simply to be, but to be reported, known, to have awareness of one's being added to that being; and this is just what happens when the appropriative experience supervenes" (JOURNAL, Vol. II., p. 180).

term is meant something that can exist alone. But while not an entity it exists when it does exist. Its supervention makes the objects of its incidence into experienced objects; the concrete whole thus arising, namely, objects-experientially-together, is what is properly called experience, when this latter term is used concretely.[12] Or, to put the matter controversially, in order that there should be an experience, it is not sufficient that qualities and relations should *be* or *be there;* it is likewise necessary that they should be in a recognizable and identifiable synthesis; and this synthesis is not "invoked" to explain the fact of experience or the fact of knowing. The synthesis is an actual factor of experience, and is as obvious and patent to whosoever may look for it as are the qualities and the relations which radical empiricism takes justifiable pleasure in enumerating and championing.[13]

Having explained what is meant by experience, namely, a unique togetherness of things, we may next inquire whether this togetherness is a relation. The answer is that while in some respects it is similar to relations, yet there is very good reason why it should not be unreservedly and unqualifiedly classed with relations; and this reason is not connected with *a priori* considerations, but is of a piece with the reasons which have impelled thinkers to distinguish between qualities and relations. It is well known that some psychologists prefer to call relations form-qualities (*Gestaltqualitäten*). There is no great harm in this, because the defining term "form" serves to differentiate between these "qualities" and other qualities. So if any one should prefer to call experiential togetherness a relation between things, no serious calamity would thereby befall philosophy, provided that the word "relation" is not treated as a leveler of distinctions that actually exist between the things to which the term

[12] The term is frequently used abstractly and then as practically synonymous with experiencing. Some thinkers at the present time seem to use it as synonymous with *things* experienced. The very fact, however, that the adjective "experienced" has to be added here shows that not things, but things-as-experienced, is always the meaning of the term experience when it is used concretely. No concrete thing as such is experience except the concrete thing whose *fundamentum concretionis* is experiential togetherness. It may well be that any particular thing, even when not in experiential togetherness with something else, is still a concrete something, but it is not a concrete *experience.* I can not but think that much confusion has resulted from the habit of calling anything experience, whether it is experienced or not.

[13] I can not well pause here to discuss with "the belated drinkers at the Kantian spring" the question whether what I here call experiential togetherness or experiential synthesis is what Kant in his chemical analysis of these waters called the synthetic unity of apperception. Even if it should prove to be the same thing, it must be remembered that Kant's chemistry was somewhat alchemistic and recognized in elements some magical properties which can no longer be identified.

is applied; and to prevent this leveling process it is desirable, in case experiential togetherness is called a relation, to call it the experiential relation of things. But by whatever term any one may choose to name it, it is of supreme importance to take the thing "at its face value, neither less nor more." We must mark the part it plays in the concrete whole it constitutes; and if we do so, I think that we shall see that it treats relations in exactly the same way in which it treats qualities. It binds them together with each other and with qualities into a peculiar whole, and the analysis of that whole reveals the togetherness as a factor distinct from the things thus together. In this togetherness, relations do not seem to stand any closer to the togetherness than qualities do. The fact that relations are relations does not seem to give them any special prerogative or precedence in experiential society. The terms of their admission and their standing after admission are the same as those of qualities. Just as particular qualities may or may not be within the scope of any particular experiential togetherness, so it is with relations. Relations may even obtain between qualities that are in experience and yet not be themselves in that experience. The togetherness of things in experience is no more a matter of relations than of qualities; if it is distinct from the latter, it is likewise distinct from the former. Indeed it is distinguishable from both relation and quality in very much the same way in which relation is distinguishable from its two or more terms. We may therefore say that quality and relation are the "terms" of the "experiential relation"; but to avoid the confusion involved in the use of relation in two senses in the same sentence, it is preferable to follow current usage and group together quality and relation as contents, and to distinguish them as contents from the form of experiential togetherness which functions identically in the various contents, whether relational or qualitative. The analysis of experience if thoroughly carried out will, I believe, always reveal in addition to the content of experience another factor, namely, the unique togetherness of the content which makes it into experiential content.

This last remark is of course an assertion of an "inner duplicity" of experience. Whatever upon analysis shows factors of different kinds is not simple, but complex. Experience is duplex in character, disclosing upon analysis two factors, phases, aspects, call them what you will; namely, contents and their peculiar mode of experiential integration. This latter factor is called by various names. It is "experiencing," "feeling," "consciousness," and "awareness." It may be true that neither the "plain man" nor the philosopher defines these terms in this way, but I think that the fact which these terms designate, when divested of all that fancy has clothed this fact

with, will be found to be just the fact of a unique togetherness of things, which makes these things into experienced things.

While not wishing to make too much capital out of it, still I think that some corroboration is given to the above description of the nature of experience by the fact so often noticed, that there is no consciousness or feeling or experiencing of just one *single indistinguishable* thing. Why is this so? Is it not because the very nature of experience is that it is a peculiar synthesis of different contents?

In this paper I have refrained from raising many questions that should be answered in any, even sketchy, philosophical account of experience. I have done so, not because I think that these questions should not be answered, but because I have not wished to complicate the problem of stating the general nature of experience with specific problems which might distract our attention from the main problem of the paper; and the main contention of this paper is twofold: first, that experienced things are, when experienced, together in a unique way; and secondly, that this unique way of togetherness is not the result or the by-product of their being experienced, but is what is meant by their being experienced. The first part of the thesis will perhaps not be seriously questioned by any one. A man has merely to move his eyes in any direction to find certain objects entering into a context and others departing from that context; the whole mass of things experienced forms a certain *Zusammensein* or *Zusammenhang.* In the same way ideas enter into this federal union of things and then secede, whether in doing so they perish or no. So long as they are in the alliance they have an experiential fellowship with whatever else is also in that alliance. All this I venture to hope will be allowed to pass without challenge. The real issue arises when it is said that to be experienced means nothing else than to be within *such* an association of things. Such a statement can not be proved *a priori;* it purports to be only a description of facts; and must be tested as any such description is tested. Is there any other fact in the constitution of experience which has been overlooked in this description? If so, what is it? If not, then the description must stand, at least till it is bettered. In answering this question I beg the reader not to allow the term "togetherness" as I have employed it to prejudice him. Like every general term, it emphasizes common features and slurs over peculiar features. The real question is whether all the peculiar features of "consciousness," "feeling," "experiencing," etc., are not differentiating peculiarities of a unique way of togetherness of things.

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THE TRUE, THE GOOD, AND THE BEAUTIFUL FROM A PRAGMATIC STANDPOINT[1]

BY the pragmatic standpoint I shall here mean the disposition to reinterpret the logical, ethical, and esthetic values of experience in the light of their relation to the life processes of the organism. From this standpoint, human experience may be viewed as a series of efforts to bring about a harmonious adjustment or vital equilibrium between the private experience of the individual and the incomparably broader experience of an environing nature. Every experience, whether it be predominantly cognitive, conative, or affective, involves in some way this demand of the organism for an adjustment of internal to external relations. To offer a defense of this view-point would be superfluous. The new life which has come into psychology by the adoption of the functional or biological method of investigation is a sufficient vindication of that method. I wish rather to call attention to the fact that this new pragmatic method does not justify some of those who call themselves pragmatists in identifying or confounding together the types of value which we call the true, the good, and the beautiful; but that on the contrary it provides a new and firmer basis for distinguishing sharply between these values. In other words, granting the right of the pragmatist to regard truth and beauty no less than goodness as forms of organic adjustment or equilibrium, I would deny the conclusion that truth and beauty are therefore mere forms of goodness.

By way of preliminary justification of this position, we may observe that there are obviously three ways in which an individual element and its environing context may attain to harmony or equilibrium. First, the element may undergo whatever alteration of its nature is demanded by the context, the context itself remaining unaltered; or second, the context may undergo whatever alteration is demanded by the element, the latter remaining unaltered; or third, the element and its context may each of them spontaneously, and without compulsion from one another, attain to harmony or equilibrium.

Let us first consider which of these three kinds of equilibrium may be interpreted to constitute cognitive value or truth. Truth is a quality belonging primarily to judgments, and whatever our views as to its ultimate nature, I think we might all agree that a judgment is true when and only when it states a fact. What a judgment states may be called the judgment-content in distinction from the mere act of making the judgment. For example, in the judgment A is B, the judgment-content is the complex idea "A-a-case-of-B" or "A-standing-in-the-subsumptive-relation-to-B." Truth applies to a

[1] Read before the American Philosophical Association, December, 1908.

judgment only in respect to the judgment-content, not in respect to the judgment-act. If the content of the judgment is a fact, then the judgment is called true; if its content is not a fact, it is called false. When we say that truth is the agreement of a judgment with fact we mean no more than this: that the relation which the judgment asserts shall have the status of fact. The problem of defining truth then reduces to the problem of defining fact. Now most of us, I suppose, would be willing to admit, first, that the only facts that we can know anything about are those that are either perceptually or conceptually experienced and, second, that we distinguish a fact from an appearance not by an impossible comparison of it with a standard outside of experience, but by observing whether it be consistent or inconsistent with the totality of other experience. Thus the objects and events of a dream are called appearances rather than facts not because of any internal inconsistency, but because they are inconsistent with the broader and more inclusive experience of waking life. The crookedness of the stick partly immersed in water is regarded as mere appearance because it is incompatible with the general system of experiences which relate to the stick. May we not say then that a judgment is true when what it asserts is consistent with the totality of experience contents? The cognitive interest or the interest in attaining truth will then be neither more nor less than the attempt to make the contents of individual judgments consistent with the contents of other judgments previously verified, and so indirectly with the general system of the things and relations given in experience. As long as there is conflict or lack of consistency between any judgment and the general system, there is to the rational mind a condition of instability and dissatisfaction. The cognitive situation demands that the judgment content be so altered as to make it harmonious with that general system of which it is a part; when this is done equilibrium results, and we have the experience of cognitive value or truth.

The type of equilibrium here evidenced would seem to be the first of the three types mentioned above, for when we are testing the truth of a judgment it is essential to the success of the process that we make the judgment accord with the environing facts. This point will come out more clearly, however, if we compare judgment with desire and conation.

Now a judgment and a desire are alike, first in that both are elements in an individual consciousness. They are alike, secondly, in that the occurrence of each implies a demand for a certain end or goal. And they are alike, thirdly, in that this end or goal is a condition of equilibrium between the element and the total context. Alike in these three respects, the judgment and the desire differ in

the manner in which the common goal, *i. e.,* harmony with the environment, is to be attained. The briefest and most familiar way of stating this difference is to say that *a judgment is satisfied when its content conforms to the environment of fact, while a desire is satisfied when the environment of fact conforms to it.* In both cognition and conation an effort is made to adjust the individual to his environment, but in cognition the adjustment is brought about by manipulating ideas in such a way as to make them conform to the environment, while in conation the adjustment is brought about in the opposite way, namely, by manipulating the environment in such a way as to make it conform to the needs and desires of the individual. And there is a second difference between judgments and desires that is bound up with this contrast in their methods of realization. They differ in origin. The judgment-content is something *given to* the individual, the desire *springs from* the indivdual. The environment presents its demands to the individual as facts, while the individual presents his demands to the environment as desires. When the individual conforms to the cognitive demands of the environment he affirms them in judgments that are *true.* When the environment conforms to or gratifies the conative demands of the individual the resulting equilibrium is called *good;* thus we see that as truth, or cognitive value, corresponds to the first of the three possible types of equilibrium, so goodness or conative value corresponds to the second of these types. But cognition and conation are not merely different in method and in origin, they are different also in their temporal outlook or attitude. The conative attitude is essentially prospective; one can not will anything except it be regarded as a possibility, and a possibility is always future. The cognitive attitude, on the other hand, is essentially retrospective for it addresses itself to a realm of facts and every fact is a *factum,* a *fait accompli,* something done and therefore past.

It is curious that in the face of these contrasts between the cognitive interest in truth and the conative interest in goodness, certain pragmatists, notably Dr. Shiller in his philosophy of humanism, should attempt to reduce the true to a form of the good. The reason for this error lies, I think, in the similar, though opposite, error of very-thorough-going British absolutism, for Schiller's humanism is, after all, scarcely more than very thorough-going inversion of Bradley's absolutism. Now the temper of Mr. Bradley's system is essentially Spinozistic and, except for his phraseology, there is little to remind us of Fichte and the other right wing idealists from whom he is descended. Spinozistic absolutism is, of course, monistic and subordinates the individual to the environing system or absolute. Regarded merely as a mode or appearance of the latter, the individual

and all the contents of his consciousness (desires as well as judgments) can achieve value or equilibrium in only one way—by conforming humbly and *in toto* to the demands of an eternal and immutable order. Because whatever is, is true, the absolutist assumes that whatever is, is right. The good is reduced to a form of the true, and the plastic and indeterminate future which is the sphere of the will is subordinated to the timeless order of truth. Absolutism may indeed be defined as the attempt to view reality under the fixed and immutable form of the past, and humanism is the answering attempt to view all things under the form of the plastic and changeable future.

It was inevitable that the former should call forth the latter as its appropriate reaction. The best antidote for the intellectualistic ethic of Mr. Bradley was the voluntaristic logic of Mr. Schiller. But why neglect the middle ground of common sense? Why do both absolutists and humanists overlook the fact that reality, with its past and its future, is comprehensive enough to include the fixed order of fact demanded by the truth-seeker and also the plastic realm of opportunity presupposed in all pursuit of the good. It is doubtless true that these two phases of experience never occur in complete isolation from each other. No experience is so purely conative as not to have a cognitive aspect, and none is so purely cognitive as to be free from the element of conation. But despite their inseparability, the conative and the cognitive types of value are as distinct from one another as north and south and to seek to identify them or to reduce either to a form of the other is sheer confusion.

And now that we have seen in what way the true and the good correspond respectively to the first and the second of the three general types of adjustment by means of which the individual may attain to equilibrium with his environment, it remains to inquire whether there be an analogous correspondence between the remaining type of adjustment and the experience of beauty. At the outset of this final portion of our inquiry we must take into consideration that the beautiful is not the only kind of value applicable to feeling. The pleasant is equally with the beautiful descriptive of affective value, and it is necessary before going farther to adopt some conception of their relation. If we revert for a moment to the concept of cognitive value or truth, we may note that truths are of two grades, particular and universal. In a particular judgment the relation constituting the judgment-content is a transitory and not a permanent fact. The judgment, "some dogs are black" asserts that the quality of black occurs at some times, but not necessarily at all times, in coexistence with the qualities connoted by the term dog. But the judgment "all dogs are animals" asserts that at each and

every time that we might experience the qualities connoted by the term dog, we should also experience in coexistence with them the qualities connoted by the term animal. Now corresponding to this division of the objects of cognition into particular and universal truths is a quite similar division of the objects of conation and desire. There are the goods that satisfy our casual and temporary desires and there is that higher grade of good which consists in the satisfaction of wants that are permanent and universal—necessary to our very existence as social and spiritual beings. The two classes of desires are often found at variance with one another and the term good is sometimes used in the ethical and restricted sense to designate only things which possess this higher form of conative value: the things which, as we say, ought to be desired. Returning now to a consideration of the distinction between the beautiful and the merely pleasant, I think we shall find that it is the same sort of distinction as that between the particular and the universal truths, or as that between the merely desired and the ethically desirable or good. Writers on esthetics seem to differ sharply on this point, but their differences are, after all, more apparent than real. Compare, for example, the views of Marshall, Santayana, and Kant. The beautiful, says Dr. Marshall, is the permanently pleasant; Professor Santayana defines beauty as pleasure objectified or externalized. Now it goes without saying that if an object is a permanent source of pleasure the pleasantness will be localized in the object, for the same reason that sweetness is localized in sugar, or that any quality is localized in the object which regularly or permanently evokes it. And conversely, if the pleasure aroused by an object be fleeting, irregular, and variable, dependent on our passing mood rather than on the nature of the object, why then we shall not tend to localize the pleasantness in the object, but only in ourselves, and we shall regard the object as being merely pleasant, not as being beautiful. To define beauty with Marshall as the permanent in pleasure, or, with Santayana, as pleasure objectified, actually and pragmatically amounts to the same thing. For Kant, the important phase of the relation between beauty and pleasantness lies in the element of universality which distinguishes the esthetic from the merely hedonic experience. But here again we have a conception quite in accord with the two just considered. For if the pleasantness of anything is due primarily to the permanent nature of the object rather than to the changing mood of the conscious subject, it will normally be aroused in all similar subjects, will be, that is, a universal or public pleasure concerning which all should be able to agree. The beautiful then would seem to be neither more nor less than the permanently, objectively, and universally pleasurable. The further defi-

nition of beauty will thus depend upon the definition of pleasure.

Pleasure, like most of the ultimate types of experience, is difficult to define. It may be, but is not necessarily, an object of desire. It usually, though not invariably, attends the satisfaction of a desire. It resembles the objects of cognition in that it may be given to the individual without any anticipation or effort on his part, but it differs from a fact of cognition in that it is never forced upon the the individual against his desire. It seems, indeed, to be somewhat between the cognitive and the conative forms of experience. In cognition it is the environment which primarily determines our experience, while in volitional activity our experience is primarily determined by ourselves. But whether we shall feel pleasure or not, depends neither on the nature of the environment nor on the nature of the individual, but solely on the particular relation at the moment of one to the other. When the environment happens to accord with the organism, or with any part of it, in such a way as to accelerate or facilitate its processes, then, and only then, does pleasure result. Thus the essential feature of affective value, distinguishing it from the values of cognition and conation, is that it is neither enforced nor achieved, but simply happens. Indeed, much that Kant says of the freedom and spontaneity characterizing the experience of beauty, might, it seems to me, with even more obvious truth, be applied to the experience of mere pleasure.

The type of equilibrium or adjustment between organism and environment that is demanded for the realization of esthetic and hedonic values is one in which individual and environment each independently or spontaneously accords with the other.

To conclude: I have tried to show that corresponding to the three great types of human value which are called the true, the good, and the beautiful, there are three processes of adjustment through which the human organism may attain to equilibrium with its environment: these are, first, the adapting of the individual perceptions and judgments to the facts of the environment, which gives the cognitive value of truth; second, the adapting of the facts of the environment to the desires of the individual, which gives the conative value of good; and, third, the spontaneous and unenforced adaptation of individual needs and environing facts to one another, which gives the affective value of beauty or pleasure. The pragmatic method as thus applied to the analysis of values by no means confirms the conclusion adopted by the humanistic pragmatists that cognition and feeling are reducible to conation, but seems rather to provide additional reasons for regarding these three types of experience as severally distinct and irreducible.

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A NOTE ON THE SPECIALIZATION OF MENTAL FUNCTIONS WITH VARYING CONTENT

SINCE Spearman[1] showed the inadequacy of correlations calculated from original measures subject to chance variations, revisions of all previous results, such as those of Wissler[2] and Thorndike,[3] have been needed to decide how far the extraordinary specialization of mental functions to which the earlier researches bore witness holds true when the reducing influence of chance variations in the original measures upon these intercorrelations has been removed or allowed for.

I have recently made such a revision in the case of the relation between (1) accuracy in drawing a line to equal a 100 mm. line and (2) accuracy in drawing a line to equal a 50 mm. line. Wissler, using a single trial with a 50 mm. line and its bisection, found a correlation (Pearson coefficient) of only + .38. My records comprise 30 trials for each length with 37 individuals, young women from 19 to 23 years old, all in the same class in the New York City Training School and so all of very closely the same degree of mental maturity. I use the deviation from the standard as the measure of inaccuracy. I obtain as the probable true correlation + .77. The obtained correlations from which the +.77 is estimated by the Spearman formulæ are (Pearson coefficients):

Av. Error of	1st	15	100 mm. lines	with Av. Error of	1st	15	50 mm. lines		+ .655
"	1st	"	"	"	2d	"	"		+ .533
"	2d	"	"	"	1st	"	"		+ .432
"	2d	"	"	"	2d	"	"		+ .471
"	1st	"	"	"	2d	15	100 mm.	"	+ .642
"	1st	15	50 mm.	"	2d	" 50	"	"	+ .642
Average Error of 30			100 mm. lines	with Average Error of 30			50 mm. lines		+ .582

The importance of this result lies in the failure, even after correction of perfect correlation between the function of equaling a 100 mm. line and that of equaling a 50 mm. line. The resemblance denoted by $r = .77$ is not very close. For instance, we may say that a man's ability to equal 100 mm. lines is little or no more like his own ability to equal 50 mm. lines than it is like his twin brother's ability to equal 100 mm. lines. Such a state of affairs seems preposterous. But the fact remains and, until more elaborate measures are made, it must apparently be accepted. Nor is it without corroboration. Woodworth and Thorndike[4] found that training in estimating short lines ($\frac{1}{2}$ to $1\frac{1}{2}$ inches) did not spread at all readily to estimating

[1] *American Journal of Psychology*, 1904.

[2] Monograph Supplement No. 16 to the *Psychological Review*, 1901.

[3] "Heredity, Correlation and Sex Differences," 1903.

[4] *Psychological Review*, July, 1901.

long lines (6–24 inches). Recent studies of the behavior of the eye give the possibility that the physiological events may be more different in the two cases than has been supposed.

But if accuracy of discrimination of length means something radically different when the length is 50 mm. from what it means when the length is 100 mm., does it not appear that our descriptive names for mental functions are very inadequate? If the variations with content of the processes to which we give the same name are so great as this sample case would make them out, should not the psychologist make content a matter of prime importance for study? The case just quoted shows content as far more influential than it has been supposed to be, but I could also quote cases where it is less influential than it has been supposed to be. Our traditional psychology has been unable to deduce even very simple relations,[5] and this inability implies that it does not know what the functions are which it names and pretends to describe.

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DISCUSSION

CONCERNING A PHILOSOPHICAL PLATFORM: A REPLY TO PROFESSOR CREIGHTON

EVERY rational discussion rests necessarily on the assumption that an agreement on the points under inquiry is both desirable and possible. This assumption every worker in any department of knowledge tacitly makes, except the radical sceptic alone. His position may be unassailable, but it is so merely because he places himself outside of any generating problem whatsoever. His thesis remains therefore an absolutely barren speculative possibility. In order formally to exclude him, we could state our own problem in the hypothetical form: Assuming an agreement on some philosophical questions and their answers to be both desirable and possible, required to find them and to devise methods by which agreement on them can be obtained. The critic who wishes to assail this assumption may try with the opposite hypothesis.

[5] For instance, who of my readers will, in ignorance of direct experimental data, venture to estimate the coefficients of correlation between:

1. Ability in addition and ability in writing the opposites of words.
2. Ability in addition and ability in marking A's on a sheet of capitals.
3. Ability in addition and ability in doing arithmetical "problems."
4. Ability in division and ability in doing arithmetical problems.
5. Ability in drawing lines to equal a 100 mm. line and ability in judging which of two lines both about 100 mm. long is greater.

I am moved to make these remarks, because the key-note of the criticism of my paper "Concerning a Philosophical Platform" at the meeting of the Association in Baltimore was that such an agreement was "neither desirable nor possible"; and now Professor Creighton in his article "The Idea of a Philosophical Platform" in this JOURNAL (Vol. VI., p. 141) takes the same position. He states: "From the very nature of philosophy it ought to be evident that such a platform is neither desirable nor possible of attainment" (p. 142). On the contrary, I still think that the only fruitful way of treating the question of a philosophical platform is, by a study of the philosophical needs of other departments of inquiry, to convince one's self of the necessity of an agreement, to assume its possibility, and to go to work. But Professor Creighton, whilst denying the possibility or even desirability of "such a platform," maintains, at the same time, that a platform in some sense already exists: "A platform, then, does, in some sense, exist, and always has existed, in philosophy" (p. 143) and "we can not deny that some agreement, especially regarding the nature of the problems that can profitably and significantly be raised and the kind of answers which they demand, is an essential condition of the existence of the subject as a rational branch of human inquiry" (pp. 142–143). Professor Creighton seems to include in this platform which he considers as already existing, first, a definition of philosophy, and secondly, an ideal of philosophy, both of which I urged in my paper as essential parts of a platform on which we philosophers *ought* to agree, at least for the time being, until we are ready, for specific reasons, to change this part of our platform. I do not know what the definition of philosophy is which Professor Creighton had in mind, when he made such a definite conclusion from its "very nature," but a preceding sentence at least implies a definition: "The nature and function of philosophy . . . is an attempt to understand and evaluate the standpoint and results of all the sciences and the meaning of experience as a whole" (p. 142). Does Professor Creighton mean to say that on *this* definition there is anything like an agreement among the experts? Or is he, at least, willing to offer it as a possible definition for criticism, or would he prefer to restate it more formally? The sentence seems also to imply some ideal of philosophy, the "kind of answers" which we may expect; namely, that philosophy is *critique*.

But I do not wish to criticize these points which seem to me of supreme importance, as long as they are stated merely incidentally and implicitly in a paper with the main contention of which I am in hearty agreement. For purposes of further discussion, I therefore ask Professor Creighton, first, to state what he considers a good definition of philosophy. By this I do not necessarily mean a new

attempt to comprise in a statement the common characteristics of existing philosophies, past and present, but merely a proposition that may serve as a working basis and which, therefore, will be definite, consistent, distinctive, and comprehensive. Secondly, I ask Professor Creighton to state what he considers to be the proper form of solution which we can expect of the generating problem implied in the definition of philosophy aforementioned. If philosophy is to be merely critique, then what kind of critique? If it is to be a constructive system, what kind of a system? Are its propositions to be proved; then what kinds of proof are demanded? On these points at least he must consider an agreement possible, as he seems to imply that it already exists.

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PEQUAKET, N. H.

REVIEWS AND ABSTRACTS OF LITERATURE

La notion de valeur; sa nature psychique, son importance en théologie. GEORGES BERGUER. Genève: Georg & Co. 1908. Pp. 365.

The author of this work, Georges Berguer, was born in Geneva on September 9, 1873. After studying in the college of his native town, he entered, in 1891, the faculty of theology of the university. He also studied in the universities of Edinburgh and Strassburg. Since the completion of his studies, he has been employed as a minister in the Lutheran church of Montbéliard, and later in Lyons and in Geneva. He has also been given charge of the chair of religious psychology in the faculty of theology of Geneva.

Mr. Berguer is already known for the following works: "L'education de la conscience de Pierre par Jésus de Nazareth," a contribution to the study of the pedagogy of Christ; "Le jardin clos," poems; "L'application de la méthode scientifique à la théologie"; "L'agnosticisme religieux," an answer to Professor Frommel, in *Revue de théologie et de philosophie de Lausanne,* 1905; "L'autorité religieuse et la valeur de la Bible" (with the cooperation of Aug. Gampert).

In "L'application de la méthode scientifique à la théologie" Mr. Berguer has shown what can be understood by a "scientific theology." He had made a study of the scientifically observable phenomenal manifestations of religious facts, leaving out of account their importance in the intimate life of the subject. It is the other aspect of theology that he now studies; that aspect which is not concerned with the grouping of facts, but with the justification of beliefs. On approaching this aspect of theology, he finds the notion of value in the foreground.

"La notion de valeur" was written as a dissertation for the doctor's degree in theology at the University of Geneva. It consists of three parts. The first part studies the problem of value in itself; the second and the third corroborate the results obtained, (*a*) by a study of the fact

of conversion, (*b*) by the consideration of a case of subverted values; the case of Nietzsche.

The first character of value, says the author, is its objectivity. Value appears to us as a specific quality of the objects, which leads us to pass a favorable or an unfavorable judgment upon them. It is on account of its nutritive properties that bread has value for us. It is through her external appearance or her mental endowments that our beloved has won our heart (Chapter 2).

But value also depends on the subject and on the general circumstances in which he is placed. Gold is most valuable in our eyes. It has no value for yon savage tribe which the irresistible spread of our civilization has not yet reached. It is despised by the monk who, by the vow of poverty, has raised an impassable barrier between himself and the world (Chapter 3).

At first blush, continues the author, there seems to be a contradiction in these results. The only means of solving the difficulty is to recognize that value belongs to the subject and to the object at the same time; that it is neither a quality of the object, nor a state of the subject, but a relation, susceptible of unceasing, multitudinous modifications (Chapter 4).

What is the exact nature of this relation? The author admits with Lotze that it belongs to the affective order and is akin to pleasure. This pleasure is nothing but the feeling of harmony which a being experiences in its environment. It is not, therefore, a pleasure of a lower nature. Its moral character is more or less elevated according to the nature of the subject (p. 70).

It follows therefrom that any modification of the affective nature of an individual will be followed by concomitant modifications of his whole set of values. The more we ascend in the scale of being, the more complicated will these modifications become. Groups of values will arise, each of which will rest upon its own merit, and will claim the priority with regard to the other groups. And where shall the priority be? Of the various independent, unconnected value groups, which shall conquer? which shall perish? We find ourselves face to face with the need of a value criterion.

We discover in human beings, the author continues, a value relation of a new kind. It asserts itself with an imperative character, with a claim of absolute right to victory. This new relation is moral obligation, which thus becomes the capital problem, the point in which the question of value is centered. This feeling of moral obligation, which makes man a moral being, constitutes, as it were, the scientific character of humanity as such.

In spite of their imperative character, the relations of moral obligation do not always obtain the victory to which they are entitled. They are opposed by the affective relations which had previously obtained in the race and in the individual. There thus arises a rending asunder of our intimate self, the tragic moral misery which theologians call sin.

The author is thus in perfect agreement with Kant in so far as the

imperative and absolute character of the moral law is concerned. He believes, however, that Kant has erred in regarding the fact of moral obligation as an ultimate fact, susceptible of no further analysis. And Kant has thus failed to explain why the sentiment of respect—which may be described as the subjective aspect of moral obligation—does not partake of the character of absolute necessity of the categorical imperative; or, in other words, why man does not always act in agreement with the voice of the moral law.

Moral obligation possesses a twofold character. On the one hand, it asserts itself as closely connected with our intimate self, as an essential constituent of our own being. On the other hand, it imposes itself with absolute authority, as the expression of a will which differs from our own. And even when we try to elude its precepts, it remains in us and condemns us, appearing as the undying testimony of a higher being whom we are bound to obey.

This plain, undeniable fact of our experience leads us to regard moral obligation as a relation between our finite will and the will of God. It is the result of the unconditional and absolute action of the Divine Being on the subconscious principle of human personality. And it follows therefrom that the same fact—a religious fact—constitutes the specific nature of man and enables him to assign value to things. Man can assign values because he is a religious being. The problem of values is thus essentially a religious problem.

It is, however, a terrible truth, a monstrous fact, that we disobey the voice of the moral law—a voice which is the privilege of our race. Possessors of an absolute norm of value, we blindly follow the impulses of our vilest passions. There is in us a continual struggle, an abnormal condition in which our own nature is at war with itself, a combat in which we are at the same time the aggressor and the victim. It is here that the problem of redemption and of conversion appears.

The second part of Mr. Berguer's work is devoted to an analysis of the experience of conversion.

From the psychologists' point of view, to say that a man is converted means "that religious ideas, previously peripheral in his consciousness, now take a central place, and that religious aims form the habitual center of his energy" (William James).

According to Mr. Berguer, this explanation, correct so far as it goes, is not, however, ultimate. Conversion is undoubtedly what the psychologists tell us; but it is also something else. On the whole, the psychologists' explanation presents two blemishes: (1) it does not account for the essential and distinctive character of conversion, nor for the permanence of the moral modifications it produces in the subject; (2) it is incapable of finding the causes of the displacement of the fields of consciousness, and of the permanent impression left in the convert by one of these fields (p. 198).

Moreover, if it is true that all psychologists are very accurate with regard to the conditions which precede conversion, and to the results by which the fact of conversion is followed, it is also true that they fail to

explain the "turning-point" which is conversion itself. James tells us that conversion is a change of place in the fields of consciousness; but how and why this change of place occurs, he does not tell us.

In the process of conversion there enters an element foreign to the will of the subject. There takes place a kind of self-abandonment which may be compared to that singular strategem by which we succeed in remembering a forgotten word; we leave the word out of consideration and concentrate our attention upon something else, and lo! all at once the word is there before us. Something similar happens in conversion because the field of consciousness is then occupied by sin, towards which all voluntary efforts naturally converge. There is, however, a subconscious field in which opposite elements are at play. In order that these elements may possibly come to the surface, the "sinful ego" must forget itself for a while. It must sink below the conscious field and leave the space free for the "regenerated ego." There takes place then a subconscious work to which is due that transformation of the judgments of value which is the immediate antecedent of conversion.

How is that subconscious work effected? Not by the will of the subject, but by an external force acting upon his soul. We are bound to admit the presence of an agent, of a mysterious action at work within our subconscious field. The obligatory character of the results produced compels us to regard it as the action of a personal will. It is the action of a being endowed with an absolute right upon me, the action of the being on whom I depend, the all-powerful God.

Let it be well understood, however, that these results by no means contradict the theories of the psychologists. They belong to a field—the field of values—which psychology does not and can not enter. And Mr. Berguer here proclaims the principle of psychoreligious parallelism, which may be enunciated thus: In religious phenomena, to every psychical state there corresponds a process of value; and to every process of value there corresponds a psychical state. These two elements are irreducible to each other (p. 283).

In the third part of his work the author points to Nietzsche's moral nihilism as to a sad example of the results we are liable to obtain when we neglect the moral and religious factors, or subordinate them to intellectual principles. The preposterous consequences of Nietzsche's system, the absolute ruin of morality to which it leads, show how absurd is the attempt to base a theory of value on anything but moral obligation.

Such is Mr. Berguer's account of the nature of value. His theory, always very interesting, is, in my opinion, assailable in some points. He maintains, in the first place, that value, being neither entirely subjective nor entirely objective, must be regarded as a relation between the subject and the object. Thus far, I believe, no objection can be raised. It may be, however, parenthetically observed, that this property is far from being peculiar to value alone. It is a constituent of all the facts, of all the elements, of all the truths of this world. Whenever we perceive, whenever we feel, whenever we know, we are in the presence of

an objective reality which we translate in terms of our own mind; of a reality which is outside ourselves; which would, however, be quite different for us if we were constituted otherwise. The chair on which I am sitting is certainly not a creation of my mind. A carpenter made it and brought it to my room. And yet, if I were an angel, deprived of the senses of sight and touch, although my chair might continue to exist for me, it would not be what I now call a chair. And it is, therefore, subjective to that extent.

After having traced the relational character of value, Mr. Berguer invokes the testimony of some writers on the subject, and, from their unanimous consent, concludes that value belongs to our affective nature. This conclusion seems very questionable. Value is proportional to desire; but desire is caused by intellectual factors. When we regard gold as valuable, our judgment is grounded upon the intellectual knowledge of the commodities gold may enable us to get. And value seems thus to be connected with our intellectual as well as with our affective nature. As a great metaphysician of our day, Désiré Mercier, has so clearly shown, "a thing is not good because it is desirable; it is desirable because it is good; and it is good because it answers to the exigencies or to the conveniences of the subject for which it is good."[1] In the whole of Mr. Berguer's work, a superiority is thus unduly assigned to emotional and moral —which are resolved into emotional—over intellectual factors.

In a being like man, in which so many relations of value are struggling for victory, there must undoubtedly be a definite criterion. But, is this criterion proved to be moral obligation by saying that moral obligation is in us, that it works even before we suspect its necessity; that it naturally imposes itself upon our conscience (p. 104); that, since it imposes itself upon our conscience with an absolute immediacy, its authority is the authority of God (p. 156)? Do not intellectual truths possess a character exactly similar?

That the objective and absolute character of truth and goodness may lead us to believe in a Divine Being which contains all truth and goodness within himself, has been maintained by eminent philosophers, such as St. Augustine and Professor Royce. I would not assert that they are wrong, although the force of their argument is not clear to my mind. But what I would maintain is that moral truth does not possess any superiority over intellectual truth; and that, accordingly, the absolute character of the moral law can not lead us to God any more directly than the absolute character of mathematical science. We must act according to duty; our conscience tells us eloquently, and we can not stifle her voice. But our intellect also tells us, and with equal force, that the sum of the three angles of a triangle is equal to two right angles, and we are unable to rebel against its authority. If we see God behind the categorical imperative, why should we not see him also behind the geometrical figure?

The author's theory of conversion gives likewise to a moral and religious fact a superiority which it does not seem to deserve. In his opinion, conversion possesses two distinctive characteristics: first, it does

[1] Mercier, "Metaphysique générale ou ontologie," p. 229.

not leave the subject as he was, but produces in him something decisive and permanent; secondly, it is due to a sudden displacement of the fields of consciousness, which psychology is unable to explain. We readily admit that conversion is a fact of the utmost importance; that it transforms the whole field of values in man. A sudden, decisive, and permanent transformation may, however, be due to other than religious causes. I will mention, in the first place, the complete overthrow of all past values and the new meaning imparted to our whole life by the passion of love.

Love may work an absolute change in a man's life; a change which will remold his whole self, give new values to the things he had despised, perhaps remove forever from his field of consciousness the objects he had hitherto cherished. How many young men are there not in whom the passion of love has even been powerful enough to make them renounce the religion of their ancestors and embrace a doctrine they had hitherto despised! I have known one who descended from the old settlers of Maryland. Proud of his family he had always been, proud of his religion also. He abjured his faith, abandoned his parents, gave up his glorious name for the blue eyes of a Protestant factory girl. All the ideals of his youth were forsaken and have never been able to come to the front again. Thirteen years have elapsed; and the youth, now a man, still lies at her feet, a slave to love and to human frailty. She makes his life miserable; he knows it and he tells her; but he is unable to reform. And when the ideals of his youth assert themselves again, the simple words, "Jack, my darling," and a pat on the shoulder suffice to drive them away.

Mr. Berguer will no doubt answer me, that in such a case as this we do not feel an impression of obligation, but of necessity; and I will grant him that it may be so; although, even on this point, much might be said. The question, however, was to point out that conversion does not present any marked character which unmistakably sets it apart from other transformations of our field of values. At all events, even impressions of obligation may easily be adduced against Mr. Berguer's theory. Remarkable cases of such impressions are furnished us by those counter-conversions of which Nietzsche appears to the author as the most striking example; cases in which the intellectual factor has been predominant and has driven away the religious value. It is unnecessary to say that Nietzsche is far from being an isolated case. Although few men have gone so far as to reverse the field of value altogether, there have been numerous examples of lovers of truth who, like Nietzsche, have been led to reject the religious beliefs of their tender years. Victor Hugo and Ernest Renan are memorable examples. Their intellect led them—erroneously, perhaps, but this is not the question now—to abandon their religious faith. It asserted its right in the most authoritative manner. It imposed its conclusions with a character of absolute obligation. The counter-conversion of these men was followed by the most decisive and permanent results, by results which have changed the whole course of their lives. Why should we affirm that conversion points to the immediate action of God on our soul, if other processes, endowed with the same

characters, evidently do not point to such an action? Would it not be better, after all, to take the pragmatist point of view and to judge of the tree by its fruit?

Mr. Berguer's work, however, points to a great truth. It shows us that science can not tell all about human life and human values; that facts and laws of facts do not solve the enigma of man's destiny; that there exists a whole region of human experience about which science is silent, because it falls without science's realm. And this is probably what a great French writer meant when, a few years ago, he proclaimed the bankruptcy of science. Science is sacred. It increases almost indefinitely our knowledge of the world. There is, however, a field which science does not enter. It is into this field that Mr. Berguer leads us in his work; and, although we may fail to agree with some of his conclusions, we can not but heartily praise him for his noble undertaking.

JOSEPH LOUIS PERRIER.

NEW YORK CITY.

The Development of the Senses in the First Three Years of Childhood. MILLICENT WASHBURN SHINN. *University of California Publications in Education,* Vol. IV. Berkeley: University Press. 1908. Pp. 258.

The contents of this volume form a continuation of the studies by the same author, published in 1893–99 under the title "Notes on the Development of a Child" as Volume I. of the *University of California Studies,* and is designated on the title-page as Volume II. of this earlier work.

The novelty and the value of this latest study of Miss Shinn's consist in the fact that it is avowedly a summary and interpretation not only of her own recorded observations, but also of all observations, published or in manuscript, which were available on the subject of child development, thus having rather complete data from twenty or more cases. Copious foot-notes allow many observations to be introduced as illustrative material which substantiates or corrects the records of the author. The book is written in a very scholarly and systematic style, so that its conclusions form a real contribution to child psychology and point the way to some organization of the mass of unrelated reports on child nature. The biographical, rather than the experimental, method has been followed, and the material is arranged somewhat chronologically, although under the following captions: Part I., "Sensibility of the Newborn"; Part II., "The Synthesis of Sense Experience"; Part III., "Development in Discrimination and Intelligence."

In Part I. Miss Shinn discusses the sensibility of the child as to the usual eight classes of sensations, and concludes as follows: "The child at birth is capable of receiving impressions in every department of sense (unless for a short delay in the case of hearing). These impressions are feeble, but have from the first the quality of pleasantness or unpleasantness, and to a certain extent at least their own specific qualities, so that they give a varied experience. But the sense condition differs totally from that of

the adult, in that central connections are wanting; each sensation is a wholly isolated experience; there can be no proper perception, discrimination or recognition, no consciousness of space, of objects, or of externality." It is on account of the lack of connections in the nervous processes that the author finds small resemblance between ontogenetic and phylogenetic psychical functions, the latter depending on this very connectedness for the preservative power.

Part II. takes the child through the first half-year when, as the author believes, it has in rough outline the same phenomenal world as that of adults. The grouping and fusion of sense experience takes place wherever two or more sensations occur together, and are treated of in six series: namely, visual-motor, tactile-motor, visual-motor and tactile-motor, auditory and visual associations, associations of the minor special senses, and feelings of a bodily self. Her inference from watching this process is that the child is not born into "a big, blooming, buzzing confusion." "Rather does the babe drift softly in among phenomena, wrapped away from their impact in a dim cloud of unconsciousness, through which but the simplest and faintest gleams make their way to him. Then month after month the multiplex vision without clears itself from the background of cloud, bit by bit, everything grouped and ordered for him in the very process of coming to his consciousness—a wonder and a joy to him, and the most beautiful of all unfoldings to see."

At the end of six months the child enters upon a more active exploration of the world and seems to have cooperation of the senses. Contrary to the old doctrine that the lower senses are the first which enter into the conscious experience, the higher senses are the first to develop and hold the baby's attention, according to the author's observations. Sight, touch, and the feelings connected with muscular activity develop before taste, smell, temperature, or pain. Organic sensations such as hunger, thirst, and organic discomfort are in the background of consciousness with infants as much as with adults, and also have probably the same relation to the feeling of self. Two specific conclusions which the author states are peculiarly interesting:

"1. Glitter and chiascuro interest more and earlier than color. Plane form is discriminated earlier, and interests more than color. The first picture books should be in black and white outline. No certain evidence has been found of the existence of full color perception till well on in the second year, but I found it completely developed by the last quarter of that year.

"2. The mouth is at first the chief organ of touch and prehension, and is preferred for touch months after the hand has taken its place in prehension. It is for purposes of touch, not on account of taste associations, that objects are so persistently carried to the mouth."

A fourth part deals with pedagogical results, but no special program for sense training is laid out. Care must be taken to furnish the child with objects to grasp and suck in the first months, to show him pictures, colors, plane forms and to say over to him rhymes and jingles a little later.

In the third year the letters may be learned, and simple songs and rhythmic steps. On the other hand, one must never break in on the self-activity of the child who is satisfied at his play, since it is this distraction and frittering of the child's energy that causes fatigue more than sustained effort. The most important factor in the child's development is the presence of human beings, who furnish him the most varied and interesting experiences of any objects in his environment. This study more than any other, perhaps, shows how all activity, except the first reflexes, is at first a vague and unsuccessful attempt at movements which shortly become so skilled that they have long been called instinctive. It shows how everything in experience is attained through practise, and not by sporadic bursts.

Nineteen tables and numerous summaries orientate the reader very well, but still the omission of a table of contents seems inexcusable.

L. Pearl Boggs.

Urbana, Ill.

National Idealism and the Book of Common Prayer. Stanton Coit. London: Williams and Norgate. 1908. Pp. xxv + 467.

Dr. Coit's latest book represents an attempt to overhaul the "Book of Common Prayer" in the interest of a Christian humanism. The whole concern of religion, in the author's view, is with the establishment of a social justice here upon earth. The sense of the identity of true religion with devotion to social causes is, he thinks, sweeping through the souls of men to-day as did in George Fox's time the thought of the inner light, and in John Wesley's the thought of the immediate experience of Jesus Christ in the heart. The identity of righteousness with God is becoming the steady vision of a universal principle, so that the test that any man is living for God, for Christ, for the Holy Spirit, is his readiness to die rather than wring money from the poor, or commit any other form of social injustice. Effective social service makes necessary those preparatory acts of spiritual discipline which store up motive power within our minds and make us ready for occasions of heroic energy. In the "Book of Common Prayer" Dr. Coit finds a ritual which, when freed from its supernaturalistic elements and enriched with some adequately ethical modern expressions, can well serve the purposes of the Church of England regarded as a national ethical society. Even in its present form the "Prayer Book" witnesses to a bold move in the Anglicanism of the sixteenth century away from supernaturalism and toward social democracy; and its emphasis on the doctrine of personal immortality is much lighter than the average worshipper might imagine. The God who speaks in the Ten Commandments need be thought of as no transcendent being, but as the unifying will of the community; and it is to this same communal will that we address the petitions of the Lord's Prayer. The essence of the substance of the Litany in its present form is the love of social justice, so that it would need only slight modifications to meet the specifications of a national idealism. Thus the petition, "That it may please Thee to grant unto all thy people increase of grace to hear meekly

Thy Word," etc., could be amended to read: "That all our people may become willing to hear new truth and receive it with pure affection, and may bring forth the fruits of wisdom, We most earnestly desire."

In identifying religion with the passion for social justice, Dr. Coit has to ignore some important tracts of human experience. Of religion as a sense of dependence on a power, not ourselves, beyond a communal will, he makes scant reckoning; and as for Destiny, he would seem to leave us to intimidate it when possible, but to worship it never. How the unifying will of the community is to become a sufficient God for moral life is not evident when one reflects that if the communal will registers ethical advancement, it evokes no martyrdoms in behalf of such moral good as yet remains to be made communal. Nor is it at all apparent that worshippers taking on their lips the abstract terms of the improved "Prayer Book" would have an advantage over those for whom devotion to duty is "intensified in intellectual clearness and in emotional strength by the conviction that its aim is also that of a great personality."

In providing material for the reformed manual of devotion, Dr. Coit draws on the writings of the illuminati and he makes happy selections from Shelley, Swinburne, Whitman, and Henley. Only, we are moved to inquire, what, in the name of social democracy, is to become of "honest John Tompkins, the hedger and ditcher," when he goes to church and is confronted with such liturgical caviare?

DAVID BAINES-GRIFFITHS.

NEW YORK.

JOURNALS AND NEW BOOKS

MIND. January, 1909. *The Logical Foundations of Mathematics* (pp. 1–39): R. B. HALDANE. – A reply to a criticism by Mr. Russell. Mathematics depends upon the concept of quantity, and not upon a formal logic with no *a priori* reference to existence. Mr. Russell's epistemology suffers from ignoring the idealists. *On Our Knowledge of Immediate Experience* (pp. 40–64): F. H. BRADLEY. – How can immediate experience know itself? By becoming merged in the all-inclusive, non-relational reality which includes all that we experience. *Psychical Process* (pp. 65–83): HAROLD H. JOACHIM. – To sever the object known from the processes of knowing deprives the process of factual content. "Psychical facts, we might say, as so interpreted, are a contradiction in terms; for qua 'psychical,' they can not be 'facts'; and qua 'facts,' they have lost the characteristic in virtue of which they were 'psychical.'" *A Modern Basis for Educational Theory* (pp. 84–104): W. H. WINCH. – Turn less to the teachers of the past and more to the thinkers of to-day. Cease to think of philosophy of education as something independent of the general philosophy of our own time. Above all, quantify knowledge. *Professor Watson on Personal Idealism: A Reply* (pp. 105–107): H. RASHDALE. – A protest against alleged misrepresentation by Professor Watson in his work "The Philosophical Basis of Religion." *Note on Plato's Vision of the Ideas* (pp. 118–124): A. E. TAYLOR. – Criticizes and rejects a theory

of Mr. Temple published in *Mind,* N. S., 68, pp. 502–517. *Humanism and Intuitionalism* (pp. 125–128): F. C. S. SCHILLER. – A reply to an article by Mr. Walker in *Mind,* N. S., 67. *Critical Notices:* E. Belfort Bax, *The Roots of Reality:* HENRY BARKER. Graham Wallas, *Human Nature in Politics:* W. H. WINCH. *New Books. Philosophical Periodical Notes.*

James, William. *"A Pluralistic Universe: Hibbert Lectures at Manchester College on the Present Situation in Philosophy."* New York: Longmans, Green & Co. 1909. Pp. vi + 399. $1.50.

Jungmann, K. *"René DesCartes: Eine Einführung in seine Werke."* Leipzig: Fritz Erkardt. 1908. Pp. viii + 234. 6.50 M.

Wundt, Max. *"Geschichte der Griechischen Ethik."* Band I. Die Entstehung der Griechischen Ethik. Leipzig: Wilhelm Englemann. 1908. Pp. 530. 13 M.

NOTES AND NEWS

THE Western Philosophical Association met at Washington University, St. Louis, on April 9 and 10. The program was as follows: "Religious Implications of Current Realism," Bernard C. Ewer; "The Relation of Schiller to Post-Kantian Idealism," E. C. Wilm; "Hegel's Conception of an Introduction to Philosophy," J. W. Hudson; "Earlier Hegelianism in St. Louis," William Schuyler; "What Kant and Hegel meant to the Earlier Enthusiasts of the Movement," F. E. Cook; "A Psychological Study of the Motives and Reasons for the Vogue of German Idealism in America," J. R. Dodson; "Evolution and Metaphysics: The Obsolescence of the Eternal," A. O. Lovejoy; "Religious Truth of Hegelianism," W. M. Bryant; "The Ethical Significance of the Hegelian Dialect," Henry W. Wright; "Some Features of the Social Aspects of Hegelianism," James H. Tufts; "Realism and Idealism: An Attempt at an Agreement on Terms," introduced by J. E. Boodin. The following officers were elected: Professor Carl E. Seashore, University of Iowa, president; Professor G. A. Tawney, Cincinnati University, vice-president; Professor Bernard C. Ewer, Northwestern University, secretary-treasurer; Professor A. O. Lovejoy, of the University of Missouri, and Professor F. C. Sharp, of the University of Wisconsin, additional members of the executive committee.

PROFESSOR HENRY JONES, on behalf of a committee, appeals for funds toward a memorial of the late Dr. Edward Caird in the University of Glascow—to place an inscribed tablet in the moral philosophy class-room, and to supplement the endowment of the lectureship in political philosophy.

DR. R. S. WOODWORTH, adjunct professor of psychology at Columbia University has been made professor of psychology at the same university.

MR. H. H. WOODROW has been appointed tutor in psychology at Barnard College.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

HERMANN EBBINGHAUS

THE sudden death, on February 26, at the age of fifty-nine years, of Dr. Hermann Ebbinghaus, professor of philosophy at Halle, is felt as a severe loss throughout the psychological world, for few psychologists were more international in their reputation and sympathies. Nowhere, perhaps, will the loss be keener felt than on this side of the water, where his work has long been held in high esteem, and where his great book, the "Grundzüge der Psychologie," is by many regarded as the best general treatment of the subject. It is specially to be regretted that his untimely death should interrupt this work in its midst.

Hermann Ebbinghaus was born on January 24, 1850, son of a merchant of the town of Barmen. His preliminary education was obtained at the gymnasium of his native town, and at the age of seventeen he entered on university studies at Bonn, later migrating to Halle and to Berlin. His studies were interrupted by the Franco-Prussian war, at the outbreak of which he entered the German army. At its close he returned to Bonn, and continued his studies there for two years more, receiving the degree of doctor of philosophy in 1873. At the outset of his university career, his interests had lain in history and philology, but he was gradually led over into philosophy, and the subject of his doctor's dissertation was "Hartmann's Philosophy of the Unconscious," a work which he discussed in severely critical fashion. Among his teachers of philosophy had been Erdmann, Trendelenburg, and J. B. Meyer.

In those very early years of the development of experimental psychology, it is not strange to find that one who was to take his place among its greatest representatives did not, in his student days, come into personal contact with any one who professed the subject. Yet we have evidence that Ebbinghaus already had advanced ideas regarding the proper scope of psychology—the evidence being contained in two of the "theses" which he undertook to defend in his doctor's examination. These were, that "psychology, in the widest sense, belongs under philosophy in no more intimate way than natural philosophy belongs there"; and that "exist-

ing psychology consists more of logical abstractions and verbal classifications than of knowledge of the real elements of mind." Ebbinghaus should indeed be counted among the pioneers of experimental psychology; he belongs to that second generation which followed close on Helmholtz and Fechner, and which included, in Germany, Müller and Stumpf as well as the older and earlier Wundt. It was apparently by Helmholtz and Fechner that he was most influenced; largely also by Hering and by the English associationists. During the years following the attainment of his doctorate —the years in which Wundt published the first edition of his "Physiological Psychology," and established, at Leipzig, the first psychological laboratory—Ebbinghaus also, with characteristic independence, was bringing together in his mind the various lines of work which contributed to the establishment of an independent science of psychology on an empirical basis. In 1880, he became "privat Dozent" of philosophy in the University of Berlin, and offered courses in physiological and experimental psychology, as well as in the history of philosophy. Already, before this date, he had conceived and begun to work out his principal original contribution to the progress of empirical psychology. He had devised a method by which quantitative experiment could be extended, beyond the sphere of sense impressions and reaction times to which it had mainly been confined, to the memory, and by which so apparently inaccessible a thing as the degree of retention of matter which had once been learned but passed beyond recall could be measured. His demonstration that so central a process as memory could be studied by exact methods added greatly to the courage of the young science, and his work was the starting-point for a large and steadily increasing literature.

Appointed extraordinary professor of philosophy at Berlin in 1886, he remained in that position till 1894, when he became regular professor of philosophy at Breslau; there he remained till called in 1905 to a similar post in Halle, which position he held till his death. The one course which he constantly offered, at Berlin, at Breslau, and at Halle, was a seminar in experimental psychology. Besides this, he offered, at various times, courses in general psychology, in introduction to philosophy, in the history of philosophy, in the philosophy of Kant and of Schopenhauer, in logic and theory of knowledge, in esthetics, and in the history of pedagogy. His lectures on philosophical subjects are reported to have been highly acceptable, but he has probably made no original contributions to philosophy, his own field being distinctly psychology.

In 1890, in cooperation with Arthur König, he established the *Zeitschrift für Psychologie und Physiologie der Sinnesorgane,* the first psychological journal of wide scope to be published in Germany,

though antedated in America by Stanley Hall's journal. The *Zeitschrift* had completed its fiftieth volume at the time of its editor's death, and had probably more fully represented the progress of psychology during these twenty years than any other one journal, though many have followed in its steps.

A bibliography of Ebbinghaus's work would not contain very numerous titles. He was by no means prone to rush into print. He presents his point of view in this matter in a certain passage, where he says that "the individual has to make innumerable studies for his own sake. He tests and rejects, tests once more and once more rejects. For certainly not every happy thought, bolstered up perhaps by a few rough-and-ready experiments, should be brought before the public. But sometimes the individual reaches a point where he is permanently clear and satisfied with his interpretation. Then the matter belongs to the scientific public for their further judgment." In accordance with these principles, we find that his first experiments on memory, completed in 1880, were held back and repeated entire over three years later, and not published till 1885.

A nearly complete bibliography of Ebbinghaus's work follows:

"Ueber die Hartmannsche Philosophie des Unbewussten." Inaug. Dissertation, Bonn, 1873. Pp. 67.

"Über das Gedächtnis. Untersuchungen zur experimentellen Psychologie." Leipzig, 1885. Pp. ix, 169.

"Die Gesetztmässigkeit des Helligkeitscontrastes." *Sitzungsberichte der K. pr. Akademie der Wissenschaften zu Berlin*, 1887, 995–1009. (A quantitative study of brightness contrast, leading to the formulation of two simple laws, with application to the consideration of Weber's law.)

"Über den Grund der Abweichungen von dem Weber'schen Gesetz." *Pflüger's Archiv für die gesamte Physiologie*, **45**: 113. 1889.

"Über negative Empfindungswerte." *Zeitschrift für Psychologie*, etc., **1**: 320–334; 463–485. 1890. (Here he follows up Delboeuf's conception of the measurement of sensation as in reality a measurement of sense-distances.)

"Theorie des Farbensehens." *Zeitschrift für Psychologie*, etc., **5**: 145–238. 1893. (A thorough discussion of the Helmholtz and Hering theories, with an attempt to add an explanation of the facts which are not readily accounted for by them.)

"Über erklärende und beschreibende Psychologie." *Zeitschrift für Psychologie*, etc., **9**: 161–205. 1896. (A justification of hypotheses, analysis, and causal explanation in psychology, in opposition to the criticisms of W. Dilthey.)

"Über eine neue Methode zur Prüfung geistiger Fähigkeiten und ihre Anwendung bei Schulkindern." *Zeitschrift für Psychologie*, etc., **13**: 401–459. 1897. (The "Combination method" of testing intelligence, and the application of this and other methods to the problem of school fatigue.)

"Die Psychologie jetzt und vor hundert Jahren." *C. R. IV. Congrès international de Psychologie* (Paris, 1900), Paris, 1901. Pp. 49–60.

"Ein neuer Fallapparat zur Controle des Chronoscops." *Zeitschrift für Psychologie*, etc., **30**: 292–305. 1902.

"Grundzüge der Psychologie." Band I., first half, 1897, completed 1902.

Second edition of the first volume, 1905. Pp. xvi, 732. Band II., 1. Lieferung, 1908. Pp. 96.

"Abriss der Psychologie." 1907. Translated into English by M. Meyer, 1908. Pp. 214.

The most important of these papers as new contributions to psychology are, no doubt, the study of memory, already mentioned, and the "combination method" of testing mental ability. This test has been widely used, and has probably greater claims to be regarded as a test of intelligence than any other single test that has been introduced.

Ebbinghaus, like James, whose work he regarded very highly, was one of the early biological psychologists. He insisted that the problems and methods of psychology were of the same general sort as those of natural science. Only, they were more closely allied to those of biology than to those of physics and chemistry, and the analogies of psychology with biology were much more sound and fruitful than the analogies with physics and chemistry. Such atomistic analyses of mental life as were put forth by the Mills, and such conceptions as those of Helmholtz in his theory of color vision and of Wundt in his theory of space perception, would, he says, have been impossible to any one who approached psychology from the side of biology. He supported the nativistic view of the perception of time and of two-dimensional space, and found their basis in sensation. Movement and change, likeness and difference, unity and multiplicity also inhere in sensation, and do not need, fundamentally, to be constructed by any process of association or mental activity.

All his work gives evidence of breadth of view and well-matured judgment. He possessed a good historical sense, and on several occasions has given illuminating sketches of the history of psychological progress. His clear and engaging style is enriched by a vein of humor and by a multitude of apt illustrations. Perhaps because the best years of his life were passed somewhat outside the main current of German university life, his personal disciples can not be counted in large numbers; they include A. Wreschner, L. W. Stern and O. Lipmann. It is through his writings that his influence has mostly been felt, and this influence seems destined to continue.

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THE FIELD OF PROPOSITIONS THAT HAVE FULL FACTUAL WARRANT[1]

IN a paper[2] read before this association at the Cornell meeting I adopted the following division of propositions made on the basis of the *source of their warrant:* Those propositions are *primitive* which are not inferences from other propositions used as premises, in short, that are ultimate premises; whereas those propositions which are inferred or can be inferred from others are *secondary.* Primitive propositions, in turn, are of three types: (1) axioms, or postulates; (2) logical leaps, or guesses; (3) propositions that have full factual warrant. Further, I endeavored to prove that there are, underlying our knowledge, these propositions that have full factual warrant. Following tradition, we may call them also self-evident truths, or synthetic judgments *a priori* based upon intuition. If we adopt as our definition of a proposition, *a relation obtaining between terms,* those propositions are intuitions in which *the terms and their relation are actually present in the apprehended content,* that is, are all factual. Finally, this class of propositions we found to be different from all others in that it does not come under the laws of formal logic. Thus these propositions rank logically higher even than the sufficient and necessary postulates of some parts of science, such as geometry; for though such postulates are logically independent so far as their particular science is concerned, they come under logical laws when brought into relation to other systems of science.

The purpose of the present paper is to sketch a map, but only a rough one, of the field of these self-evident propositions. Much that I have to say has been said in part by others, but not, it seems to me, as a whole, bearing upon the one problem.

First, we can limit the field of intuition by excluding from it whatever is made necessary by the foregoing classification of propositions. That is, any proposition which proves upon analysis to be secondary, or to be either a postulate or axiom or a logical leap, is by definition not an intuition. This excludes at least two important types, *causal* and *existential* propositions.

Under causal propositions I do not mean to include the so-called causal relation of theoretical mechanics; for, as Russell has shown,[3] this relation, as it appears in mechanics, is simply mathematical implication. Nor do I include the results of any attempt to reduce

[1] A paper read before the American Philosophical Association, in Baltimore, December, 1908.

[2] "The Factual," the *Philosophical Review,* May, 1908.

[3] "Principles of Mathematics," Vol. I., Chap. LV.

causation to an identity. I refer simply to the causal relation as understood by Hume and Kant. It is that relation through which a term at one time implies a term at another time, and in which this implication is either a logical leap or presupposes a logical leap. Hence it does not belong to the field of intuition.

Moreover, intuitions seem to be non-existential. Some metaphysicians use the word "to exist" in the sense that I use the word "fact"; but it is important to keep the two distinct. That is, I should say, the factual is immediately revealed to us, but the existent is always inferred. Thus interpreted there appear to be two remaining uses of the word "to exist"; although few recent writers help us by giving a formal definition of this most important relation. First, an existential proposition implies *some possible future percept,* and is, therefore, a rather complex causal relation. As such it falls without the field of intuition. Secondly, an existential judgment is one in which *we apply our knowledge.* If we accept this meaning, all pure science is to be regarded as strictly non-existential and as becoming existential only when we apply it to the facts. So the most primitive form of an existential judgment is the reaction accompanying any of our percepts, or rather its implications. The word "apply" in this sense seems equivalent to Royce's expression, the "external meaning of an idea," and is, perhaps, indefinable. However, our present problem raises only the question: Can we apply knowledge without assuming axioms, postulates, or logical leaps, and especially without asserting some causal relation? It seems to me, we can not; and therefore, although factual propositions may be involved, yes, are involved, no existential proposition is merely a factual proposition or even a primitive proposition.

How shall we describe affirmatively this field that we have so far limited by exclusion? We can do so by answering three questions: First, what fundamental relations do these judgments assert as obtaining between their terms? Second, how far is generalization possible within their field? Third, what place do these propositions occupy in the several branches of knowledge?

What fundamental relations obtain between the terms of propositions that have full factual warrant? If I mistake not, these can be put under four main headings. First, *the apprehension of likeness or difference between terms.* This includes, of course, not only those instances where we apprehend the respect in which the terms are alike or different, but also those instances where we are aware of mere likeness or difference. Secondly, there are *the various relations apprehended between a whole and its parts.* Here, too, we are dealing with a vast array of instances varying from cases such as Ebbinghaus's illustration—a cumulus cloud with its massive parts

heaped together, all standing out against a clear summer sky.—all the way to cases such as we have in our attempts to intuit the abstract laws of the logic of classes. Thirdly, there are *intuitions of order and of magnitude.* Here, too, we are dealing with numberless instances: so far as they can be intuited, numerical, spatial and temporal order and magnitude, the orders of the colors and of notes, the order and magnitude of the so-called intensities, order of values, and so on. Fourthly, there should be added to these three *those instances where we apprehend the presence or absence of some term in the factual field.* Perhaps this group is reducible to the first, but its importance and distinctness justify making of it a separate class. In the first place, it comprises *those instances where we fail to find a certain term in the field under scrutiny:* for example, the locomotive engineer looking from his cab window at night and finding no red light in *his* field of vision. In the second place, this class comprises *those instances where we do find in the factual field that for which we are looking, and again where we apprehend exhaustively all the terms of a given sort that are present.* Many of the experiments in which we are testing the number of objects that can be attended to at once give illustrations of the latter class, as does also any one of numerous other cases, such as when we can see at a glance how many people are in the room, or how many fingers are held up, or how many lamps stand on a table.

This list of four types may seem to many altogether too short. We might try to lengthen it by seeking evidence in factual contents that are vague and obscure; for example, in vague feelings of tendency, in the vague drift of passing time, or in the fringe of the field. In them we are usually aware of the presence of relations without explicitly apprehending the relations themselves. But our question asks only what explicit relations does analytic attention discover, and I have thus far failed to find additional types.

I pass now to the second question: How far is generalization possible within the field of the factual? From Kant until the present day the traditional place in which to seek for an answer is the foundations of mathematics and, above all, of the Euclidean geometry. Here, it has been said, we get intuitions that are high generalizations. Unfortunately Kant does not show us in detail the manner of these intuitions. Equally unfortunate is it that those mathematicians who still maintain that intuition plays an essential rôle in mathematical progress do not seem to understand precisely what the word intuition ought to mean. For example, Borel[4] means by intuition those remarkable insights of the mathematical genius

[4] "La logique et l'intuition en mathématiques," *Revue de Métaphysique et de Morale,* 1907.

in which he seizes upon some formula and beholds in it a premise with highly important implications. Such insights are logically complex and often contain logical leaps. They belong to the class of lucky hits, or guesses, made usually after many an unsuccessful one, so characteristic of genius in every field of investigation. Poincaré[5] argues that the mind, after making a certain construction, can intuit its ability to make similar ones *ad infinitum,* and so "by recurrence" get truths holding good of a class with infinite members. As we shall argue presently, the mind can approach such insights and by way of suggestion can give us such a postulate, but it can not literally intuit infinite repetitions of its own acts or any other class with a large number of members.

But is it possible to generalize at all without going beyond the intuited field? Psychology has shown that we can intuit small groups, but not large ones; hence it is possible to generalize highly, if at all, not through *extensive,* but through *intensive* judgments. If the field intuited is quite simple, and if the terms and their relation are essential to a number of similar cases and are readily seen to be such, then by apprehending this relation we get a proposition warranted by the factual and holding possibly of a vast number of cases beyond the present intuition. In such a case we have, it is true, an intuition which is general, but not one which makes evident how far new cases will contain the same terms and their relation.

Looking at a piece of scarlet paper and at a piece of vivid green paper, we are aware that they differ. Further, if we see a series of reds we are aware that they are somewhat alike, though we are unable to picture this red *in abstracto.* The corresponding truth holds regarding a series of greens. Now our question is, Can we be aware intuitively that this red *in abstracto* differs from the green *in abstracto?* Certainly we can, and therefore we have an intensive proposition that is a generalization. However, there is no guarantee that there are not reds and greens so different from the ones which we are beholding that they would fail to differ as do these; for we might have taken a series of blues and of greens and have inferred that blues and greens are never alike, not having seen the blue-greens and the green-blues. Thus in asserting that fairly high *intensive* generalization is possible in the field of intuition we look for justification to those statements of introspective and analytic psychology in which we are told that our attention can be concentrated upon features, elements, or relations common to several mental states, even when it is quite impossible to picture them abstracted from their context.

That intuition has played a rôle in the history of mathematics

[5] "Science and Hypothesis," Chap. I.

is beyond doubt; but it is by no means easy to determine just where intuition leaves off and the use of postulates begins. In fact, it probably differs markedly for different minds. I believe, as probably do most, that the intuitions underlying mathematics are far rougher, that is, less general than, for example, the axioms of Euclid often referred to as intuitions. That a straight line is the shortest distance between two points, and that only one line can pass through two points, are intuitions if limited to such cases as can be literally apprehended by the mind. If, however, they are generalized to the extent necessary for geometry, they get beyond anything intuitable and, although *suggested* by what we can intuit, pass over into the field of postulates or deductions from postulates.

A similar situation confronts us in logic. Are any or all of the foundations of logic intuitions? Intuition certainly underlies some of them in the sense that it gives us generalizations of limited scope, and thereby suggests the generalizations of greater scope. For example, the law of the syllogism as interpreted in the logic of classes ($a<b$, $b<c$, $\therefore a<c$) can certainly be intuited in a less general form; but that it can be intuited in the highly abstract form required by formal logic is quite doubtful.

Thus we conclude: we have propositions with full factual warrant that are generalizations; the most general of these are intensive, not extensive generalizations; and they all are less general than the propositions used in the foundations of logic and mathematics.

Some metaphysicians may urge as an objection that what is not possible if we restrict our cases to the field of sensation and imagination, is possible if we include imageless, or naked, thought—granting with Stout, Woodworth, and others that we have such thought.

Unfortunately the field of thought is an exceedingly difficult one to examine from the standpoint of our present problem. Most instances of thinking, even the simplest instances, are epistemologically more complicated than perceptions, that is, involve more logical leaps; for these at least I should interpret the results of such experiments as thus of Professor Frank Angell[6] on the discrimination of two grays viewed at an interval varying from fifteen to sixty seconds. In the case of these particular reagents the discrimination was not based upon visual imagery, but sometimes upon habitual verbal standards for the shades of gray, and often upon other non-visual, if not purely neural, associations. It certainly looks as though the whole field of thinking is, to a far greater extent

[6] "Discrimination of Shades of Gray for Different Intervals of Time," *Philosophische Studien*, XIX.

than the field of perception, one solely of neural processes; and whatever is neural process has to be interpreted epistemologically as not intuition.

We admit, of course, that such thought gives us genuine new discriminations and other insights into relationships, and that often, when it is imageless, it is the more efficient. But are these discoveries intuitions or assumptions? Certainly most of them are of the trial and error or experimental type, in short, are tentative assumptions; and it seems inconceivable that they could be anything else. This is not a proposition to be argued. One can simply say, Produce the instances. This, of course, does not mean that they are not often correct and true strokes of genius, for they are often well protected from being mere wild guesses by a wealth of other associated information, and also by a quick perception of some of their implications.

Turning from the question of generalization, let us consider the third question: What place do these propositions having full factual warrant occupy in the several branches of science? The most complete answer to this question has been given by Meinong[7] in recent articles. I think his answer somewhat mistaken and incomplete, due perhaps to his strong tendency toward subjective idealism, but especially due, it appears to me, to the fact that he seems not yet to have adopted the view that mathematics and mechanics are entirely deductive as well as non-existential sciences, and that the pure causal sciences also tend to become deductive and non-existential as they, too, become more and more exact.

The sciences which come nearest to falling entirely within the field of factual propositions are those which come nearest to being purely descriptive, which, of course, no body of knowledge actually is. In short, descriptive science, including introspective psychology, is densely populated with factual propositions.

Next in this respect to pure description comes the pure doctrine of values, including ethical values; for this science is non-existential and, when we exclude the hypothetical imperatives or derivative values, is also non-causal. Moreover, it is not based upon such high abstractions as is mathematics, nor does it carry on such extensive deductions. Next come the empirical beginnings of mathematics, for, as we have said, intuition has played an important part in the history of mathematics. Finally, we must add, the empirical basis of all the causal sciences is the factual. But the place of the factual propositions in their logical relation to mathematics and to

[7] "Über die Erfahrungsgrundlagen unseres Wissens," Berlin, 1906. "Über die Stellung der Gegenstandstheorie im System der Wissenschaften," *Zeitschrift für Philosophie und philosophische Kritik*, Bde. 129 u. 130.

the pure causal sciences needs a much more careful statement than the foregoing. As already said, I hold the view not only that mathematics is non-existential, but also that the pure causal sciences tend to become such as they progress. If this view be correct, the office filled by factual propositions in relation to these sciences can be stated with considerable precision.

Their work is twofold. First, they form the logical bridge between non-existential science and the body of our existential propositions. In short, we make use of them in applying science to the facts. Second, they bear two important relations to pure science itself. They suggest to science the vast array of her premises. Then, by continually suggesting further premises as science progresses they hold her consistent with numberless factual propositions, and thus they keep the path of her development close to fact.

But all of this is simply another way of saying that all inference is deductive, that inductive inference, robbed of its deductive elements, is a mere logical leap; not an inference, but a suggested premise. In short, intuitions do not give us premises from which causal propositions can be inferred or deduced. They are simply standards with which causal assumptions must be kept consistent.

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TRANSCENDENTALISM AND PRAGMATISM: A COMPARATIVE STUDY

BETWEEN New England transcendentalism and New England pragmatism there are some striking parallels. Confining our attention to the Emersonian and the Jacobite varieties of these respective movements, we find in each a revolt against tradition and intellectualism and a revival of individualism and emotional responsiveness.[1] The revolt against tradition is an apparent paradox when, along with William James's definition of pragmatism as a new name for some old ways of thinking, we recall these words of Emerson in his essay "The Transcendentalist": "The first thing we have to say respecting what are called *new views* here in New England, at the present time, is, that they are not new, but the very oldest of thoughts cast into the mould of these new times." Nevertheless this common reference to the past by the two representatives of the

[1] A. C. Goddard: "Studies in New England Transcendentalism," New York, 1908, p. 5; cf. "Pragmatism in its Relation to the History of Philosophy," a paper read at the Baltimore meeting of the American Philosophical Association, December 30, 1908, by James Gibson Hume; cf. also James Bissett Pratt: "What is Pragmatism?" New York, 1909, p. 37.

New England way of thinking is no paradox, for both refer to others not so much as authorities as corroborators of their individual opinions. If the pragmatist refers to Heraclitus and his flowing philosophy, and the transcendentalist to Plato and his intuitional method, it does not mean, in either case, adherence to dogma. Just as James deprecates absolutism and its lack of adaptation to a plastic world, so does Emerson confess to a "distrust of that completeness of system which metaphysicians are apt to affect."

And this parallelism may be carried into the positive field as well as the negative. Besides the common dislike of tradition and intellectualism as a kind of speculative reinforced concrete, there is a common revival of individualism and emotional responsiveness. Here arises a striking instance of historic repetition. In the successive generations there is a recurring cycle of thought. The generation before the transcendentalists was emotionally starved; that before the pragmatists was intellectually over-fed. Given in the one case Calvinism, and in the other Hegelianism, and a common result was brought about. The rigid determinism of the one, and the monotonous dialectic of the other issued in a common revolt of the will and of the feelings. In a word, against a kindred absolutism there was a kindred insurrection of individualism. Notice how closely allied is the attitude of the transcendentalists towards eighteenth-century rationalism with the attitude of the pragmatists towards the *a priori* method of pure reason. The pragmatists, says Dr. Hume, assert that their psychological appeal is to direct and unimpeachable experience, more fundamental, primary, certain, and essential than any theory. But in addition to a peculiar psychological content they have their own logical method. They unfold their logic, no longer a ratiocinative process, but an emotional responsiveness that locates and feels the result just as surely.[2] Compare with this interpretation of the pragmatic theory of knowledge that "intuition" which is the method of the transcendental philosophy, an "intuition" which declares that no truth is worth the knowing that is susceptible of logical demonstration.

At this juncture the critic may object to the method of parallelism as procrustean, and ask if there does not exist between these two epistemologies the vital difference between subjective and objective idealism. In a measure the difference does exist. A former generation took transcendental to mean transcending common sense. This was true in the case of many of the Brook farmers who vainly attempted the simultaneous cultivation of Platonism and potatoes. Yet even that "tedious archangel," Bronson Alcott, sought to put his theories into practise in his communistic settlement of Fruitlands,

[2] "Pragmatism in its Relation to the History of Philosophy."

while Margaret Fuller, charged with being emotional and ethereal, did much work for convicts, paupers, and outcast women. These social endeavors were the answer to the world that transcendentalism did not mean a selfish solipsism; they were the response to the warning of Emerson: "Metaphysic is dangerous as a single pursuit. The inward analysis must be corrected by rough experience. Metaphysics must be perpetually reinforced by life."

But the criterion of usefulness can not be used as a means of comparison between transcendentalists and pragmatists until the latter found some communistic system or otherwise put their tenets into larger practise. Nevertheless there remains another side of the pragmatic epistemology for comparative study. The pragmatic cognition of truth is described as possessing, besides convictions of usefulness, certain appreciations of satisfaction, which ultimately afford rest or exhilaration to the soul. Here arises a most curious and unexpected similarity between the two schools. The transcendentalists hold to pure belief; the pragmatists to the will to believe; and both verge toward the mystical in their theory of knowledge. Taking the first two marks of mysticism as ineffability and the noetic quality, there is manifest the paradox that both sides have something to say, but find it hard to say it. So recourse is had by each to an organ or faculty beyond the ordinary, in the one case the over-soul, in the other the subconscious. Thus Emerson and the lesser transcendentalists find themselves allied to the mystics of the past, while towards the pragmatists there is a gravitation on the part of those who are at present inclined to sublimate the subliminal. This similarity between the pragmatists and the "New Thoughters" is a topic that needs investigation. The academic pragmatists might repudiate the relationship, yet in many cases there seems a common bond. As for the popular subliminalists, a psychic census might exhibit an intellectual heredity going back to primitive Christian Science, to Swedenborgianism and to Quakerism. As for the wider spread of American pragmatism an added strain is demanded. That appears to be furnished by the suppressed mystical element among the descendants of Puritans. So if one were to seek the geographical distribution of this form of thought one might say that in general the intuitional isothermal line starts in Boston, drops down to New York, and runs on through Chicago. If westward the course of pragmatism takes its way, expressed in the broader terms of the migration of population, the movement appears to follow the original path of Puritanism. New England is the original hive, then in turn come New York, Ohio, and the western prolongation of the Western Reserve. This is but a tentative suggestion; we need a more accurate pragmatic map of the United States.

The comparison might be further elaborated, for in summing up the characteristics of transcendentalism Professor Goddard gives as its essentials, a disregard for all external authority and tradition, a doctrine of self-reliance and individualism, an unshakable faith in insight, instinct, impulse, intuition and, lastly, a pronounced optimism. In conclusion it might be shown how with this optimism there arises, in the case of both transcendentalism and pragmatism, a common doctrine of evil. To both movements evil is not so much moral or physical as metaphysical, a limitation of so negative a sort as to be a negligible quantity in the stupendous whole. It is, finally, such a relative belief that makes Emerson disregard the dark side of the world and leads James to incline to a doctrine of meliorism, a profound confidence in the future of the cosmos.

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REVIEWS AND ABSTRACTS OF LITERATURE

Contributions to Psychopathology. Vaschide, Viollet, Marie, Lubomirska, Meunier, Laures. Paris: Bloud et Cie. 1908. Pp. 97, 120, 124, 87, 114, 94.

No. 1. *Les hallucinations télépathiques.* N. Vaschide.

This volume is the first of a series, somewhat unpromisingly entitled "Bibliothèque de psychologie expérimentale et de metapsychie." They are all of a rather non-technical character, and the detail with which the subjects are presented is often somewhat out of proportion to the actually assured knowledge of the subject, just as the authors themselves are of widely varying psychological recognition. "Les hallucinations télépathiques" deals with the hallucinatory experiences coinciding with the death or some crisis in the life of an immediate connection. The genuineness of these phenomena is not at present accepted in the scientific world, and the sympathetic attitude with which the book opens is somewhat surprising. From certain observations of his own, as well as from the studies of previous investigators as Gurney, Myers, and Podmore, the author reaches in the end, however, a rather half-way conclusion, granting that veridical hallucinations are more than chance coincidences, without yet committing himself to their telepathic origin. It is not, therefore, a book that is likely to turn the reader from any previous way of regarding the phenomena in question. In the last chapter we have the author in his more critical vein, but, as a whole, one rather regrets the material's publication, which it is difficult to believe would have occurred in this form but for its gifted author's untimely death.

No. 2. *Le spiritisme dans ses rapports avec la folie.* Viollet.

This is among the more critical of the volumes. The morbid psychic phenomena associated with spiritualism the author classifies into two groups; the first of which run their course in predisposed individuals, and have spiritualistic associations for their immediately exciting, if not their

sufficient, cause; while the remainder progress independently of spiritualistic influences, which may only on occasion color the clinical picture. The significance of such a classification obviously depends to a great extent upon one's attitude toward the subject of mental causes in general, which to the author, at least, seems to be an ultra-liberal one; he devotes something over half the volume to the first group, and a scant ten pages to the second. Illustrative cases are practically absent, and we have no certain indication of the criteria upon which to classify a case as determined or merely colored by spiritualistic influences. Certain it is that he describes under the first group clinical pictures that are perfectly well recognized members of the second. The upshot of the matter is, that Viollet hardly describes a disease state in which it would not be exceedingly difficult to say that spiritualistic associations played an essential rôle, or that if it had not been spiritualism it would not have been something else. For, as he well points out at the opening of the volume, we are dealing here with fundamentally psychopathic personalities, unstable, impressionable, suggestible, neurotic individuals, ill-fitted to bear severe affective experiences of any nature whatever. To translate freely:

"They really require the most simple and disciplined of lives; but a fatal perversion of curiosity impels them toward all occasions for mental conflict, towards the most unnatural of affects, and the most disquieting of experiences. By this token, they are ardent in spiritualistic activity. . . . Life is for them replete with difficulties and complications from which they may scarcely escape. . . . They betake themselves to spiritualism as to a comforting religion, and there find new motives for anxiety and disquietude, because of the intensity of their faith, their feeble judgment which prevents a proper analysis. . . . Others, of more elevated intellect, are yet marked by an excess of susceptible pride. . . . They possess in a supreme degree the tendency to undermine the supports of friendship. . . . Their pride flatters them with the 'splendid isolation' which results from this state of things . . . but it is just the consequent ennui which turns them to spiritualism, to the sombre halls where they may preserve, incognito, the contacts with their personal pride, and a susceptibility which spirits do not offend.

"Still others are the over-conscientious and melancholy. There is much of the timid about them. With little confidence in themselves, fully persuaded of this inferiority and unworthiness, they tend to an immediate regret of all actions and all words. They prefer to remain inactive for fear of doing wrong, to be silent for fear of appearing discourteous or indelicate. . . . They are often of abstemious life, through timorousness, but people the world with platonic amours that never avow themselves. . . . Sentimental, by no means unintelligent, capable of sincere friendships, especially if dominated in them, but haunted by the continual fear of saying or doing something wrong . . . they gather in the obscure corners of the darkened halls where the spirits are manifested, motionless and silent, tranquil only when unobserved" (pp. 10–13).[1]

[1] These types are somewhat the same as those described by Kraepelin, "Psychiatrie" (7th edition), II., pp. 742–757.

We thus have spiritualism playing the rôle of a "substitutive reaction" of the most pernicious character, but whether the individuals who resort to this species of relief would be constitutionally capable of handling any other reaction in a healthier way, is open to grave question. There is one especially evil influence of the spiritualistic séance of which Viollet makes some mention here, to which attention was, however, called some years ago by Tuttle,[2] also suggested by certain observations of Seashore. Hallucinosis is especially favored under the conditions of expectant attention produced in the séance, and this would be especially true of the unstable individuals from whom its frequenters are so largely selected. It is possible that persons actually train themselves to hallucinate under such conditions, and thus bring about a state of grave mental disequilibrium. So it often happens that those most interested in phenomena of this sort may be among the temperamentally least fitted to give a scientific account of them.

No. 3. *L'audition morbide.* A. MARIE.

This is also a creditable volume of the series. Dr. Marie treats of various morbid psychic phenomena connected with the sense of hearing. As a matter of fact, however, his point of view is a very general one, and most of his remarks would, *mutatis mutandis,* apply to sensation in general. Hearing is rather selected as the paradigma because of its being the "sense intellectuel par excellence," "presque sense du langage articulé," "la sentinelle de notre personnalité." "Hearing," he quotes Itard, "is, of all senses, that which responds most promptly to morbid cerebral conditions. . . . Few of the deaf fail to observe the emotional influences of their disability. We know the great distraction of this sense in profound meditations and preoccupations, and it may also be remarked that hearing is more affected by apoplectic attacks than sight, taste, or smell."

The abnormalities with which the writer deals, therefore, are less concerned with the condition of the peripheral organ than with central processes. "Hypoacousie," the title of the first chapter, does not deal with derangements of hearing brought about by disease of the ear, but with the associative disturbances that stand in the way of a proper teleological reaction. Here, and indeed throughout, he adheres very strictly to a physiological conception of the disturbances described. The auditory reaction of infants and idiots, the genesis of language, and disturbances in the perception of pitch are among the topics discussed in this chapter. The chapter on "Hyperacousie," in like manner, is not concerned with a more refined auditory sensibility, but with morbid exaggerations and perversions of the response. Perverted reactions to specific auditory stimuli have received a certain recognition as degenerative stigmata. There is a considerable and on the whole commendable treatment of the phenomena of synesthesia; though it should, perhaps, be mentioned that neither this book nor that of Laures in the same series makes any mention of the important contribution of Pierce. According to the authorities noted, the phenomena are probably more frequent than is commonly

[2] *American Journal of Insanity,* January, 1902, pp. 464 ff.

supposed. The section on auditory hallucinations again emphasizes the physiological point of view, and gives some rather non-committal space to the present situation in aphasia, with special reference to Pierre Marie. The subjoined reference is taken *literatum* from the bibliography:

Bezold, Die Hoerprüfung mit Stimmgabeln beie insciliger Traubheit und die Schlüsse, welche sich dorans für die "Kuochenleitung" und für die Funktion des Schalllcitungs apparates zichen lassen: Zeitschrift f. Ohrenheilhunde. XLV., 262–274, 1903. A. Marie; L'Audition Morbide. Paris: Blond et Cie, p. 127.

No. 4. *Les préjugés sur la folie.* PRINCESS LUBOMIRSKA. Avec une préface du M. le Dr. Jules Voisin.

From the point of view of the general reader, and it is largely from this point of view that the series must be judged, this volume is, perhaps, the most interesting of the group. The five *préjugés* are the supernatural origin, the appearance, the contagiousness, the incurability, and the dangers of insanity. Under the guiding hand of an experienced clinician, the author endeavors to present the truth about each of these in a brief and readable form. Under the earlier social and religious systems the insane appeared less likely to become objects of aversion, being rather regarded as having through no fault of their own incurred the anger of all too human gods, whom, so far as might be, it was now the duty of their fellow men to appease. And through the very fact of this sympathetic attitude the insane may have been in earlier times less of a social problem than they later became. Strangely, but perhaps not altogether inconsistently, the insane did not always fare so happily under the Christian régime. This was doubtless partly because advancing civilization served to emphasize more strongly the extra-social character of the insane, but mainly, perhaps, as the author points out, that there was now a tendency often to regard the insane as divinely cursed, or having sold themselves to evil spirits, which must be driven out by prayer and exorcism, if possible; if not, by torture and death. Delusional ideas of the sufferers themselves may well have lent color to such beliefs. But from the seventeenth century onward the disease conception of insanity gradually comes into its own, and this first *préjugé* is to-day, perhaps, the one we have least to fear, at least for its consequences to its objects.

The author further describes such experiences as any ordinarily informed person might expect upon a first visit to a well-ordered insane hospital. "Madame," says her *cicerone,* "there are no more violent insane; or at least it is only exceptionally that we see them in the hospitals. . . . In earlier times, indeed, their manner of existence often led to acts of violence only too well motivized . . . the insane ceased to be violent the day that Pinel struck off their chains and replaced abuse and coercion with hygienic surroundings and kind treatment." A suggestion, of doubtful value, is here and later thrown out regarding *atelier-asiles* in which practically recovered cases might resume their proper employments until complete stability is attained. It is, of course, recognized that the psychoses are not contagious, save in so far as imitation and suggestion may effect their pernicious work upon fundamentally psy-

chopathic soil. Nor, when we remember that we must not judge by the most rigid of standards the psychiatry of such a book as this, need any extended criticism be passed on the fourth chapter, regarding the "incurability" of the psychoses. Speaking generally, the manic-depressive group and the toxic deliria are of good prognosis, while the dementias and the congenital states are not; and this is about the impression that the author gives. On page 56 Marie is quoted to the effect that the persistence of memory in manic excitements is an important symptom for its differentiation from other excitements; but though generalization is at best hazardous, surely the opposite is nearer the truth.

The fifth question, of the insane as public dangers, can be outlined in only a general way according to clinical varieties. Cases of dementia præcox and general paralysis may indeed execute during the prodromal period acts of violence wholly out of proportion to the general character of the symptoms thus far evident. The course of the disease lessens this danger more in general paralysis than in dementia præcox. Paranoias, on the other hand, will through complaints to the authorities often give warning of sinister designs. Impulsive acts of a criminal nature are also liable to occur in the high-grade imbecile and the remainder of the congenital psychopathies. The gravest dangers are from the psychoses of alcoholism, as we should probably all admit.

Altogether it is an appealing little book, and the author takes a liberal point of view; in the last chapter a more liberal one, perhaps, than would be borne out in clinical experience. The question of criminal responsibility is not touched upon, and beyond the above generalizations it is not easy to lay down any rule for the necessity of supervision; the liability of each individual to become dangerous, as well as its criminal responsibility, is best determined on its own merits by those best qualified to form an opinion through their clinical experience and scientific judgment.

No. 5. *La pathologie de l'attention.* N. VASCHIDE et RAYMOND MEUNIER.

This book promises somewhat better than it performs. There is, indeed, in the opening paragraphs a refreshingly healthy recognition of the physiological point of view, but in their consequent desire to adhere strictly to experimental data the authors often tend to lose sight of the original object of the inquiry and to gather together, under the subject of "attention," researches that can not but deal with very different psychological processes. There are brief and rather unfavorable criticisms of Pillsbury and of Nayrac, with an extended exposé of the views of Ribot. For the rest we are occupied with an account of experimental researches of which one, of course, does not expect completeness, but which might well be better proportioned. In fact, this portion of the book is mainly devoted to the reaction-time investigations of Buccola, Tschisch, Walitzky, Rémond, Janet, and Marie. To give unequivocal data regarding attention in any technical sense, however, reaction-time researches must be executed under very special experimental conditions, and with considerable refinement in the treatment of the results. Mention is made of

the observation of Janet, repeated by Sante de Sanctis, that under concentration of attention the field of vision contracts much more in hysterias than in normal individuals. The researches of Wiersma have but scant attention, and the whole discussion of fluctuations is practically ignored. The general summary is again excellent in its point of view, but the material is altogether too one-sided for an elementary presentation, and not sufficiently critical for a scientific treatise.

No. 6. *Les synesthésies.* HENRY LAURES.

The subject-matter of this book deals mainly with illustrative cases, and is quite suggestive, though at times elementary. The author divides the synesthesias, broadly considered, into three classes; first, the spontaneous and persistent synesthesias of the type of the simple colored hearing; next those which are brought about unconsciously through the similarity of their affective tone; and, thirdly, those which are nothing more than a studied comparison of two sensations of different orders; but among these last even the figures of speech are sometimes included, and it is doubtful whether they ought to be classed as true synesthesias at all. A distinction ought, perhaps, also to be drawn between the synesthesias that can and those that can not be traced in the psychogenesis of the individual; the latter may often be purely chance associations (as the child associates *a* with red because he learned the letter *a* on a red alphabet block), and, strictly speaking, only the former should have the status of true synesthesias. But it seems supererogatory to speak at once of physiological and psychological explanations of these phenomena. Association paths may vary congenitally in their degree of excitability, and in the synesthesias we probably have, through some chance neurological disposition, certain hyperexcitable paths between different sense areas. The true synesthesia, such as any other association process, may be described in entirely recognized physiological terms, save only for its occasional hallucinatory character. The important point that such observations bring home to us is the continuum between the idea and the hallucination, between the imaginary and the objectified. Upon what factors the externalization depends in these cases, whether it is purely a matter of greater vividness, and upon what factors this vividness depends, —the release of neural tension by inwardly accumulated energy (James), or the reactive power of the situation (Cattell)—is not the least accessible phase of a time-honored psychological problem.

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The Nervous Correlate of Pleasantness and Unpleasantness. MAX MEYER. *Psychological Review,* Vol. XV., Nos. 4 and 5, July and September, 1908. Pp. 201–216, 292–322.

Professor Meyer, after reviewing nine contradictory views of feeling, elaborates an original hypothesis of the structure and function of the nervous system which, among the purposes it subserves, may enable us to fix upon the nervous correlate of the common dimension of affective states.

Theories which confuse pleasantness and unpleasantness with emotion are, in the opinion of the author, doomed to failure. The emotion of anger can, for example, be either pleasant or unpleasant. Temperament seems to account for this.

Lagorberg speaks of pleasure and pain nerves, of mechanical stimulation arousing sexual pleasures, etc., and of nutritive processes in action giving rise to the vague pleasantness and unpleasantness sensations. This theory fails to distinguish between pain and unpleasantness, and is based upon the hypothetical existence of algedonic afferent nerves. Marshall denies the existence of such nerves, and does make the above distinction between feeling states and sensations. For him pleasantness and unpleasantness never result from direct mechanical stimulation. Stumpf agrees with Lagorberg in this identification of pleasantness with sensation of itch or those aroused from stimulation of the sexual organs. These sensations are *Gefühlsempfindungen* or *Gefuhlssinnesvorstellungen,* "algedonic," or "emotional" sensations. All pleasantness and unpleasantness are less intense derivatives from sexual sensation and pain, pain being always identical with unpleasantness. Marshall denies the existence of algedonic nerves; Stumpf insists that they must be found eventually. Feilchenfeld disagrees with Stumpf in that pain is not identical with unpleasantness. Fite has advanced the theory that feelings, represented as sensations by Stumpf, are not sensational in character, but represent a high, not a low degree of mentality, and that they result from conflict always. "They are not causes in mental life." Lipps's view here is substantially the same. Alechsieff concludes, from experimental results, that feelings have no direct relation to peripheral stimulation, and, further, that pleasantness and unpleasantness can not coexist. Calkins, distinguishing between unpleasantness and painfulness, finds for the former a central nervous correlate. She, however, contrary to the present writer, identifies pleasantness-unpleasantness and the "emotional life." Pikler deserves the distinction of having attempted to posit for these pleasant-unpleasant states a nervous correlate differing *in kind* from the concomitant sensory process. This he states as a distinctive functional property of the nervous system. Sensations depend on local differences of special nervous activity. "Pleasantness and unpleasantness are unlocalized because their nervous correlate is not the local difference of equal or opposite processes, but the fact of equal or opposite direction itself."

There is, hence, a need for a clear and comprehensive theory of nervous function which may correspond with already determined introspective differences in mental states. This the author now constructs. By ingenious diagrams a theory of brain structure and function is formulated which will satisfactorily explain the phenomena of sensory condensation, motor condensation, and variation of response. A nerve center means anywhere an accumulation of functionally related connecting neurones; it is a "higher center," or a still higher, according to the number of neurones by which we could reach it from either a sensory or motor point of the body. This system of connections is essentially the same in all

orders of nervous systems. The difference is not in the number of lower, but in the existence of grades of higher, nerve centers. This hypothesis of its structure is consistent with the growing tendency in higher nervous systems toward "centralization," and also with the fact that relative body and brain weight alone is, without reference to body surface, not in itself a sign of greater intellectual power. By then representing this interplay of nerve currents mechanically the nervous correlates for instinct, variation of instinct, "sensory condensation" habit, "motor condensation" habit, and inhibition are shown.

The attempt next is made to show on such an hypothesis what would be the natural nervous correlate for consciousness, and particularly for pleasantness and unpleasantness, as the author understands the nature of these feeling processes. No definite line can be drawn between higher and lower centers, but in general consciousness, sensation, imagery, feeling, etc., accompany the functioning of centers of relatively great complexity of connections, being the more elaborate as the nervous paths become more indirect and the motor response consequently more delayed. Now if pleasantness and unpleasantness are merely weak kinds of sexual sensations and of pain, as many psychologists above mentioned and others hold, the answer will have been given already. The author, however, as opposed to Titchener, for example, in one respect, views these states of feeling as differing in kind, and also as products of a relatively high development of conscious life. As they differ in kind, the author here, agreeing with Pikler, is inclined to seek for them a nervous correlate which shall similarly differ in kind from sensory correlates. Thus (p. 307) "while the correlate of sensation is the nervous current itself, the correlate of pleasantness and unpleasantness is the increase or decrease of the intensity of a previously constant current if the increase or decrease is caused by a force acting at a point other than the point of sensory stimulation."

This hypothesis will explain how such feeling states can not occur without sensory or ideational contents, and also how these latter can occur without feeling. It explains how such aspects of experience are not localized. In this way, also, the advantage over the Stumpf theory is evident. One can account for the fact that some sensations are usually unpleasant, as pain, for example; and it can further explain how pain can at times be pleasant. Likewise we can understand the usually pleasant, but occasionally unpleasant sensations, such as sweet, etc. Again, the relatively richer and more various affective tones in adult life accompanying intellectual states, as compared with those of sensory pleasures, is explained; for the processes passing very indirectly through the "highest centers" have more occasion to meet and to interfere with each other. With such an interplay of complex nervous correlates we can readily see how usually, in unified response, pleasantness or unpleasantness prevails; but their possible and often actual coexistence in a single state can in the same manner be physiologically a possibility. All introspective evidence goes to show that they are not merely positive or negative quantities of the same ideational content.

Other complex aspects of these states under discussion can also be thus most satisfactorily dealt with. Emotions, for example, indicate wide distribution of nervous currents. On this theory they need never, however, be identical with the "unanalyzed complex of organic sensations," as has so often been the method of disposal. So in the case of acquired attention, the innumerable higher centers involved explain how interest, or continued pleasantness, is a possible and natural accompaniment. As "causes of action," clearly sensations, imagery, and ideas so function, at least as ultimate causes always. The intensification of an already started nervous process, the correlate of the feeling, may be a secondary cause in the sense that the incipient action already imminent may thus not be inhibited by other sensory stimulation. As to affective imagery, this conception of nervous action makes impossible such a mental condition. Lastly, it makes most plausible the genetic view that such feeling aspects of experience, which are complex, most frequent, varied, and intense in adult and in civilized life, are the latest, not the first, and unfinished product of mental evolution. Only the direct, not the functionally indirect, causality is denied them.

Such a theory will not, of course, satisfy all psychologists. The trouble will be not so much with the conception of nervous activity as with the introspective conclusions for which the theory is formulated. Titchener[1] has recently exploited pretty fully all these introspective claims and a great wealth of others not here mentioned. The two authors on the most fundamental issues, coexistence of feelings, external localization of certain feelings, relation to organic sensations (in one important particular), and their genetic history, are diametrically opposed. They are in essential agreement in their criticisms of James, of Stumpf, of cortex speculators, of the adherents to the theory of affective imagery, of multidimensionality (this is an inference from Meyer), and pretty nearly, I should judge, in their ideas of the relation of feeling to attention—a one-sided dependence here.

The theory is exceedingly interesting and intricate, but no theory of nervous action, after all, can settle the great introspective problems which at present hinder advance. The author is accounting for many aspects of affective life which others can not believe exist. The discussion, on the whole, would have made greater and more permanent appeal had its author depended less upon general casual personal opinions as to what are the introspective phenomena which most urgently call for a revision of our physiological postulates. We can't start with assumed coexistence, etc. The reviewer is in substantial agreement himself with most of the author's introspections, but he knows of a great host of constructive psychologists who are at present pursuing, from introspective convictions, an entirely different line of attack. It would, or will, if the author contemplates it, be profitable to have a more extended discussion in this connection, showing specifically how the most popular objections to his introspective positions, stated and implied, can be met. The genuine psychological question of the relation between sense feelings, pleasantness-

[1] "The Psychology of Feeling and Attention."

unpleasantness and emotions generally, is somewhat oversimplified. This thesis likewise calls for further elaboration.

If, furthermore, it should be decided that feelings themselves are multi-dimensional and have other attributes, such, for example, as a peculiar kind of vividness, and degrees of distinction, not identical with mere degrees of intensity which are here accounted for, a more complicated nervous correlate must be postulated. Such a possible contingency the reviewer has attempted elsewhere to discuss.[2]

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Studies in New England Transcendentalism. HAROLD CLARKE GODDARD. New York: Columbia University Press. 1908. Pp. x + 217.

Professor Goddard's "Studies in New England Transcendentalism" furnish a valuable contribution to the history of American thinking. Originally a thesis for the doctorate in the department of English at Columbia University, the book has the advantage of a clear and at times brilliant style. Despite its disclaimer of being an investigation of the philosophy of the New England transcendentalists, the work throws much light on the historical setting and the speculative opinions of that group of men.

Two questions confront the author, one speculative, the other practical: whence came this transcendentalism? and how far justified, as applied to the leaders of this movement, is the popular definition of transcendental, "transcending common sense"? As to the sources of transcendentalism, it is alleged that no answer really has been given, since a complete study of these early currents of influence would amount to little less than a history of the entire political, philosophical, and religious thought of the eighteenth and early nineteenth centuries. Up to June, 1907, when this work was completed, this statement held good, for the only account of the movement was that of Octavius Brooks Frothingham, and that account, as is justly observed, was more expository and biographical than systematic. Hence the need of this book, which utilizes in most thorough fashion the biographies and literary remains of the chief characters in the movement. For the purpose of affording a proper historical setting, the first chapter is devoted to a short summary of the streams of tendency, domestic and foreign, leading to the American transcendentalism. In general, this chapter is a compromise between those who look upon transcendentalism as simply a New England importation from abroad, and those who have found in it a strictly indigeneous product. Here a study of the relations of unitarianism to transcendentalism exhibits the soundness of this mediating view. The typical unitarian is represented as a cold-blooded animal, a creature of intellect, lacking warmth of emotion. A prominent representative like William Ellery Channing proves this in

[2] "Feeling Analysis and Experimentation," this JOURNAL, Vol. IV., pp. 209–215. "Combination of Feelings," *Harvard Psychological Studies*, Vol. II., especially pp. 188–191.

a negative way. If he was a unitarian, he was one of an entirely new type, in whom the continuity of unitarian development seems almost broken. The orthodox unitarians, it is acutely observed, had carried over into the nineteenth century the temper of the eighteenth. They were chill exponents of the age of reason, but, as Channing himself remarked, in place of their heart-withering philosophy men desired excitement. This the transcendentalists furnished. In place of the regular, elaborate, harmonious strains of the Augustan age, they gave forth the "thoughts which thrill us."

Going farther afield, the writer now traces the heredity of New England thought. Among the Puritans he finds only such exceptional anticipators of transcendentalism as Jonathan Edwards and his remarkable wife. Among their descendants, whether orthodox or unitarian Calvinists, there was manifest a similar emotional starvation. To the former the religious revivals made but a transient appeal, but upon the latter, when a real philosophy of the feelings was offered, there was made a deep and lasting impression. These were transcendentalists proper, by whom the English romanticism, French sentimentalism, and German idealism, in turn, were welcomed with enthusiasm.

Professor Goddard's diagram of the early American religious ancestry is extremely informing. It shows how the New England transcendentalists both repudiated and transformed with new life the "pale negations of Boston unitarianism"; it also explains how it was hard for others than unitarians to become transcendentalists. The unitarians had been for two generations pronounced advocates of rationality, hence it was easy for their children to be tolerant of new systems.

The author's description of the eighteenth century as the age of reason is rather conventional, for in that century there was another influence at work which, though less palpable, was most pervasive. Besides the rationalistic, there was the idealistic heritage in New England. Before the coming of Bishop Berkeley, whose personal influence was unfortunately confined to the Anglican church in the colonies, there was a wide reading of the English platonists. The writer allows that Emerson was probably acquainted with Plato through the "Intellectual System of the Universe." He does not mention how the same thing occurred in the case of the Puritan transcendentalist, Jonathan Edwards. From Cudworth it is implied that Emerson derived his earliest acquaintance with the symbolism of nature. But the same symbolism occurs in other familiar writers of Old and New England, such as Quarles in his "Divine Emblems," and Cotton Mather in his "Christian Philosopher."

But the search for the sources of transcendentalism is not to be confined to mere book lists, such as are given in the useful appendix on "German Literature in New England in the Early Part of the Nineteenth Century." Besides the objective literature, there was the subjective reaction, without which there could not have arisen such a prevalent spirit of receptivity. There could scarcely have come the keen desire for the "method of spiritual intuition," and at the same time the "easy disre-

gard for all tradition," unless there had been a previous preparation and a previous rejection of unsatisfying notions. Here the author justly enumerates the negative reactions against Calvinistic determinism, deistic rationalism, and Lockean sensationalism.

In his treatment of foreign transcendentalism, Professor Goddard confines himself largely to England. Leaving aside the difficult problem of the first reading of the critiques of Kant in the United States,[1] he gives as examples of the demand for a new standard of truth, Coleridge's exaltation of reason over the understanding, Wordsworth's nature worship, the mysticism of Shelley, and Carlyle's gospel of work. With the exception of Shelley, these were the writers upon whom, according to Emerson, kindred spirits fell with pleasure and sympathy. Yet it was not until 1836 that there was formed the germ of an organization that later became known as the Transcendental Club. Out of the score of members in this club there are now selected for special study Channing, Alcott, Emerson, Theodore Parker, and Margaret Fuller. To the intellectual and literary influences affecting these variant characters a thorough and painstaking chapter is devoted. Examining both the general and technical philosophical readings of these persons, this judicious answer is given to the widely accepted theory that New England transcendentalism was a German importation: "The extent of the admissible generalization seems to be this. The *original stimulus* to the *strictly metaphysical* part of transcendental thought came fairly largely (but by no means exclusively) from Germany. Of the various channels which brought this thought from Germany to America, England was considerably the most important, and France next." Among the English interpreters of the critical philosophy Coleridge is given first place; among the French, are mentioned Mme. De Staël, Cousin, and Jouffroy.

And yet that neither the "Aids to Reflection" nor positivism gave the initial impulse to transcendentalism is justly acknowledged, at least in the case of Channing, when it is said that he "drew much of his inspiration from a point fairly high up in the stream of eighteenth-century tendency, at a place where, or close to where, the current of influence was still predominantly from England to the continent rather than in the reverse direction." But why this direct English current ending in transcendentalism should be called a relatively slender stream it is hard to see, when an adjacent passage mentions Emerson's enumeration of the forces and men that undermined the traditional religion of New England as the Armenians, the followers of Locke, and Hartley and Priestley. In conclusion, then, it may be said that this work may have certain avowed limitations, as the problems of philosophic sources; yet as a contribution to the understanding of an earlier phase of American thinking

[1] Among the first sympathetic readers were the Pennsylvanians, F. A. Rauch, president of Marshall College, and S. S. Schmucker, professor in the Theological Seminary, Gettysburg. For a review of Rauch, compare James Murdock, "Sketches of Modern Philosophy, especially among the Germans," Hartford, Conn., 1842, pp. 189 *seq.*

from the literary side, these "Studies" are of great interest and importance.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. February, 1909. *Les deux erreurs de la métaphysique* (113–141): J. de Gaultier. – The two errors of metaphysics are (1) assuming itself to have practical value as a science of the good instead of remaining purely speculative, and (2) attributing objective being to time, space, and matter. *Examen critique des systèmes classiques sur les origines de la pensée religieuse* (2e et dernier article pp. 142–162): E. Durkheim. – As neither Naturalism nor Animism is adequate to explain the origin of religion, this must be sought in a more fundamental and primitive cult. *De la connection des idées* (pp. 163–179): E. Tassy. – An application of the author's "ideative erethism" to complete the present inadequate theories of the association of ideas. F. Pillon, *L'Année philosophique* (1907): J. Delvaille. *In Honour of W. James, Essays Philosophical and Psychological:* A. Penjon. Morselli, *Introduzione alla filosofia moderna:* J. Pérès. R. Manzoni, *Essais de philosophie positive (trad. franc.)*: F. Paulhan. F. Thomas, *L'education dans la famille: les péchés des parents:* G. Compayré. E. Mach, *La connaissance et l'erreur:* A. Lalande. L. Robin, *La théorie platonicienne des idées et des nombres d'après Aristote:* C. Hoit. R. Picard, *La philosophie sociale de Renouvier:* G. L. Duprat. Kinkel, *Geschichte der Philosophie als Einleitung:* C. Huit. Gilbert, *Die meteorologischen Theorien der Griechischen Alterthums:* C. Huit. J. Adam, *The Religious Teachers of Greece:* C. Huit. Kant, *Gesammelte Schriften:* J. Segond. *Revue des périodiques étrangers.*

Cramanssel, E. *"Le Premier éveil intellectuel de l'enfant."* Paris: Félix Alcan. 1909. Pp. 192.

Croce, Benedetto. *"Filosofia della practica."* Bari: Gius, Laterza, e Figli. 1909. xix + 415.

Enrignes, Frédéric. *"Les problems de la science et de la logique."* Paris: Félix Alcan. 1909. Pp. 256. 3 fr. $0.75.

Joussain, A. *"Le fondement psychologique de la morale."* Paris: Félix Alcan. 1909. Pp. viii + 144.

Kronenberg, M. *"Geschichte des deutschen Idealismus."* Erster Band: die idealistische Ideen-Entwicklung von ihren Aufängen bis Kant. Munich: Oscar Beck. 1909. Pp. xii + 428. M. 11.

Matičvić, Von S. *"Zur Grundlegung die Logik."* Wien und Leipzig: Wilhelm Braumüller. 1909. Pp. 192.

Offner, Max. *"Das Gedächtniss. Die Ergebnisse der experimentellen Psychologie und ihrer Anwendung in Unterricht und Erziehung."* Berlin: Reuter und Reichard. 1909. Pp. vi + 275. M. 4.50.

Perrier, Joseph Louis. *"The Revival of Scholastic Philosophy in the Nineteenth Century."* New York: The Columbia University Press. 1909. Pp. viii + 344.

Prezzolini, Guiseppe. *"Benedetto Croce."* Napoli: Riccardo Riccardi. 1909. Pp. 118.

Urban, Wilbur Marshall. *"Valuation: Its Nature and its Laws—Being an Introduction to the General Theory of Value."* London: Swan Sonnenschein & Co. New York. The Macmillan Co. 1909. Pp. xviii + 433. $2.75.

NOTES AND NEWS

THE following abstract of the paper read by Dr. Hubert Foston on "The Mutual Symbolism of Intelligence and Activity" before the Aristotelian Society on April 5, is from the *Athenæum:* "Intelligence and activity are not so much names of two different facts as indications of two ultimately distinct points of view for considering fact. Intelligence implies procedure by way of definition; but definition can never be completely closed, because experience is continually subject to change. This subjection to change is, from an active point of view, the key to opportunity; it involves a plasticity in fact which leaves room for hope and effort. All definiteness in experience involves the intellectual point of view; all consciousness of process involves an active basis-continuous process being recognized only through active expectation. As neither complete definiteness free from change, nor pure change or movement without form, affords a possible start for interpreting experience, we can not avoid in philosophy a double point of view, at once intellectual and active. This double point of view can not actually be reduced to theoretical unity, since there is really no comparison possible between intelligence and activity, as if they were two kinds of fact. Neither is there any contradiction between them—for contradiction can only be asserted where two matters conflict when seen from a unitary point of view. Since, however, intellect and activity are always mutually implied, reference to the one comes ambiguously to symbolize a reference to the other; and there thus arises the philosophical illusion of a unitary point of view. While intelligence and activity can never fall for us into a unity of comprehension, they do fall into a unity of conspiracy—conspiring to suggest an ideal aim. All that can be known by beings such as ourselves suggests an ideal, either of amelioration or of continuance. But the suggestion of an ideal is not a matter of pure intelligence. We can entertain it as such only because we are active beings. Our activity must be taken seriously. The intellectualist analysis of it by reference to the expansion of an idea against limits, owes its apparent success to our being stirred to be sympathetically active in the very inter-

preting of the word "expansion"; and thus the whole problem of activity is given back to us unanalyzed in the use of the phrase. On the other hand, an ideal aim implies more than pure activity. Ideal method can not be deduced from our activity, abstractly regarded, and the ideality must be taken as a constitutional datum. If it be such in us, and not essentially of our active "making," there remains no scotch for our pragmatist denial of it as an original datum also in the facts which appear in so suggestive and educative a shape about us. Pragmatism is unreasonably exclusive here, and is tainted with the characteristic activist fallacy of making process as active account for the structural form of process which it implies. For us, as beings constitutionally committed to a life of ideal aim, ultimate reality is synonymous with ultimate trustworthiness. It is a business of philosophy to interpret the relative trustworthiness which we find in experience, alike in its aspects to thought and its warrant for practise."

A PSYCHOLOGICAL conference was held at the University of Minnesota on April 9. A leading purpose of the conference was to acquaint the managers and teachers of public schools with results that have been reached in the psychology of teaching. The program was as follows: "The Psychology of Moral Instruction," Rowland Haynes; "A Preliminary Study of Retarded Children," F. E. Lurton; "Psychology Applied to Education," Joseph S. Gaylord; "The Psychology of Word Learning: A Practical Study," Isabel Lawrence; "Introductory Class Work in Psychology": (*a*) "Matter and Methods," J. A. Hancock; (*b*) "The Use of Experiments," J. B. Miner; (*c*) "Some Experimental Evidence on the Doctrine of Formal Discipline," L. W. Kline; "The Recent Discussion of Imageless Thought," David F. Swenson.

UNDER the auspices of the Department of Physics of Columbia University a course of lectures on "The Present State of the System of Theoretical Physics," have been given by Max Planck, Ph.D., professor of mathematical physics in the University of Berlin, lecturer in mathematical physics in Columbia University, 1908–09. The subjects of the several lectures have been as follows: "Reversibility and Irreversibility"; "Kinetic Theory of Matter"; "Radiation of Heat"; General Dynamics; the Relativity Principle."

PROFESSOR A. W. MOORE, of the University of Chicago, and Professor H. W. Stuart, of Leland Stanford University, have been made full professors of philosophy at their respective universities.

DR. W. F. DEARBORN, assistant professor of educational psychology at the University of Wisconsin, has accepted a corresponding position at the University of Chicago.

DR. B. H. BODE, assistant professor of philosophy at the University of Wisconsin, has accepted a professorship of philosophy at the University of Illinois.

PROFESSOR S. P. HAYES has been made professor of psychology at Mount Holyoke College.

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PSYCHOLOGY AND SCIENTIFIC METHODS

CRITIQUE OF COGNITION AND ITS PRINCIPLES[1]

THE German philosophical terminology distinguishes between "Erkenntnis" and "Kenntnis, Wissen"; this distinction, though varying with the different authors, has been of high importance in the development of idealism; yet there seems to be no accepted fixation in the English language for these two concepts. I shall in this paper use cognition for Erkenntnis, as knowledge already stands for Kenntnis, and shall place the distinction between cognition and knowledge in the concept of system. Knowledge that satisfies the group of conditions for which the concept of system stands, is cognition. This group of conditions and therewith the definition of cognition I shall not give here, but instead point out particular instances of cognition: mathematics, mechanics stand as examples and also as parts of cognition. It seems advisable, in order to give determinateness and stability to the concept of cognition, to restrict it at first and to relate it to mathematics and mechanics only, with the provision, however, of properly extending it afterwards. Whether such an extension is possible, and what the scientific methods of such an extension are, is the subject of a special investigation; but whatever the decision of such an investigation may be, it will not affect the inquiry we are concerned in, which is independently necessary. Systems in this paper, therefore, are always systems of mathematics or of mechanics.

By "logic of cognition" I understand the systematic construction of the foundations of cognition from the true origin. This logical origin is the concept of "problem." Inasmuch as the problem may be conceived as generating a system, I call it the "generating problem." The construction of the foundations may be considered as the positing of the conditions necessary and sufficient for the solution of the problem of cognition. These conditions are the axioms or principles; they are not arbitrary (mere "conventions"), as some take it, but necessary—though in a sense of the word different from the necessity of a theorem: theorems derive their necessity from axioms,

[1] Read before the American Philosophical Association in 1902; published with several additions.

they are necessary *from;* axioms derive their necessity from the generating problem, they are necessary *for,* namely, for the solution of the problem. There is no necessity beyond the problem.

Logic of cognition is purely constructive; it posits nothing as given but its problem; and whilst it thus appears as the true basis of the system of cognition, which it makes possible, it requires a new discipline preliminary to it which establishes its problem, determines its method, and prepares its material. For construction is not generation out of nothing, nor is the logical origin a psychologically new beginning. This preliminary discipline establishes the true interrelation between logic of cognition and cognition as it is represented in its literature; and in this interrelation the advance toward the ideal of cognition is accomplished.

By "critique of cognition" I understand the examination of the actual, or possible, systematic solutions of the problem of cognition *according to principles.* This critique is the required preliminary discipline and is established with reference to a possible system of logic of cognition. "Critique of cognition" posits cognition as given. The distinction between a critique of cognition and a logic of cognition consists, therefore, in this: the first examines, the second constructs.

All criticizing is measuring and therefore presupposes a standard. According to the standard taken, there are three kinds of "critique" possible: the external, the internal (or immanent), and the systematic. The external takes as standard any other system and measures the agreement or disagreement with it. The internal measures a system by itself in the agreement or disagreement of its parts. The systematic takes as standard a complete set of critical principles to determine the objective value of the system. "Critique of cognition" is, by definition, of the third kind.

It is our task to exhibit such a set of principles. We are guided by the idea with which we started, that cognition is essentially systematic; the principles by which any system may be criticized are, therefore, the principles of "critique of cognition," and we obtain them if we consider a particular instance and remove the specializing conditions.

In the introduction to his "Prinzipien der Mechanik," Heinrich Hertz has given such a set of principles and applied them to systems of principles of mechanics. But they are based on a metaphysical assumption of which "critique of cognition" can, and therefore ought to, be free.

The principles by which the value of a system may be judged seem to me to form four groups of conditions; I call them: the conditions of logical *purity,* of logical *completeness,* of logical *simplicity* and of logical *truth.*

Conditions of Logical Purity

1. *The concepts must be well determined.*—Derived concepts are determined in their definitions. Fundamental concepts can not be defined; methods must be indicated in the system for their determination and it is not sufficient to enumerate them in the beginning as "primitive concepts," as Peano and his school have done.

2. *The definitions must be good.* A definition is the establishment of a group of conditions between certain elements. The introduction of a new name for this group of conditions and therefore the form of an equation which Peano[2] and others have declared as essential, does not concern the true nature of a definition.

A definition is good if it satisfies the following conditions: (*a*) Its elements must be well determined; (*b*) the conditions to which the elements are submitted, must be independent, *i. e.*, they must all be necessary (indispensable); (*c*) all independent conditions must be stated, *i. e.*, the conditions must be sufficient; (*d*) the conditions must be consistent. If we take, *e. g.*, the definition: A circle is a curved line whose points are equidistant from one point, it may satisfy condition (*a*), and it does satisfy condition (*d*) (because we can construct lines which satisfy the definition); but it does not satisfy conditions (*b*) and (*c*), because the condition "curved" is deducible from the others (therefore not independent), and the condition "equidistant" is not sufficient to determine a circle, since it includes, besides, each part of a circle and all curves on a sphere in the definition.

3. *The fundamental as well as the special conditions of the system must be consistent.*

4. *The conclusions must be correct.* This condition comprises: (*a*) That the conclusions satisfy the rules of the syllogism, which, using symbolical notations, have been summed up in one formula, the "argument of inconsistency," by Mrs. Ladd-Franklin;[3] (*b*) that the limiting conditions, under which the premises are valid, are observed; (*c*) that no principles are used except those which are explicitly presupposed, or proven as theorems.

These four conditions determine the logical purity of the system with respect to its generating problem; they apply, with obvious modifications, as well to the generating problem itself. In particular, the non-satisfaction of the condition of consistency (3) leads to so-called null-systems.

[2] See "Les Définitions Mathématiques, Bibliothèque du Congrès International de Philosophie," Vol. III. (1900), p. 279. See also: "Formulaire," Vol. I. (1895), p. iv.

[3] See "Studies in Logic," by members of the Johns Hopkins University, p. 40.

Conditions of Logical Completeness

1. The fundamental conditions of the system itself, as well as the special conditions of each theorem, must be sufficient; *i. e.*, all special problems (called "facts" in physics) within the realm of the generating problem must be deducible from the system. The method of ascertaining the satisfaction of this condition is the method of the constructed exception (called "experiment" in physics). This method will indicate sufficiently the importance of the condition for physics; it is equally great in mathematics, and closely allied to the "spirit of exactness."

This first condition determines the completeness of the system with respect to its generating problem. A second condition requires the completeness of the generating problem itself and may be formulated thus:

2. All special problems which belong to the realm of the generating problem must be contained in this realm of the generating problem. The difficulty of the condition lies in this: How can we determine that a special problem belongs to a realm unless it is actually contained in it? It is the same difficulty as the following: How can we determine that a definition is not complete? Whilst this condition has shown its influence in the history of science, it is not so evident for the reason that the generating problems are but rarely explicitly stated. Yet the definition of the science will always contain it. Take, *e. g.*, "geometry is that part of mathematics which is concerned with spatial magnitudes." This generating problem violates our condition because it does not contain the problems of modern projective geometry. Or, if we should formulate the generating problem of geometry, with modern geometers, purely projectively, and accept Mr. Bertrand Russell's proof that the projective definition of distance only superficially contains the Euclidean, then we should maintain that the special problems of Euclid's geometry are not all contained in the realm of our generating problem. In both cases the system might be complete so far as our first condition of completeness is concerned. It is evident that the method of testing the satisfaction of this second condition is the same as that of the first.

Another method of testing the satisfaction of these conditions of completeness is to show that the system embraces another system which has already been tested. One system embraces another if the content of the second can be deduced from the first; *e. g.*, to show that a set of axioms is complete for metrical geometry, it is sufficient to show that from the set an established set can be deduced.[4] The

[4] *E. g.*, Professor J. Royce's paper: "The Relation of the Principles of Logic to the Foundations of Geometry," in *Transactions of the American Mathematical Society*, Vol. 6 (1905), No. 3, pp. 410 ff.

method is, however, applicable only under certain restrictions which can not be discussed here. It has sometimes, though mistakenly, been used to prove the *possibility* of a system.[5]

Conditions of Logical Simplicity

1. *The fundamental conditions must be simple.* The work of modern mathematicians has shown that an interchange between principles and propositions is possible, so that different solutions of the same generating problem can be obtained by a proper change in the choice of theorems as principles. However, there seems to exist between the principles (and the concepts to which these principles correspond) a definite relation such that we call the one simpler, the other more complex. It must be possible to determine this relation in the various concrete cases, though it is hard to state it in general. If it is found, our condition gives preference to the system which has the simpler principles and concepts; so that it is not of equal value for the system, though it may be logically indifferent, which is made the foundation and which the derived. As an illustration note Heinrich Hertz's objection to Hamilton's principle as a fundamental principle of mechanics.[6]

2. *The fundamental conditions must be few.* Either the number of principles may be different in the different selections of principles referred to in the preceding condition, (1), or auxiliary principles may be required; preference is given by our condition to the smaller number, unless it is in opposition to the preceding condition. As an illustration see Professor E. V. Huntington's definition of a group,[7] as compared with the one given by H. Weber in his "Lehrbuch der Algebra,"[8] or v. Helmholtz's objections to W. Weber's theory of electrodynamics.[9]

3. *The fundamental conditions must be mutually independent ("necessary").* The method of ascertaining the satisfaction of this condition consists in the construction of a system which satisfies all

[5] See H. Hertz, "Prinzipien der Mechanik," p. xxiv: "Dass aber die gegebene Zusammenstellung in jeder Hinsicht eine *mögliche* ist, beweise ich dadurch, dass ich ihre Folgen entwickle und zeige, dass bei voller Entfaltung sie den Inhalt der gewöhnlichen Mechanik aufzunehmen vermag. . . ." It is, however, clear, firstly, that therewith the possibility of one system is merely set in relation to that of another; secondly, that for this a special principle would be required, which may be formulated thus: if from a set of conditions we can deduce possible results, the set is itself possible; and thirdly, that the real question at issue is not the possibility but the relative completeness of the two systems.

[6] "Prinzipien der Mechanik," p. 27.

[7] *Bulletin of the Am. Math. Society* (1902), second series, Vol. VIII., No. 7, pp. 296–300.

[8] Vol. II. (1899), pp. 3–4.

[9] H. Hertz, "Mechanik," Vorwort, pp. x–xi.

the conditions with the exception of the one whose independence is in question. The application of this condition to Euclid's axioms of geometry has led to new systems of geometry and to a revision of the foundations of Euclidean geometry.

The first three conditions of this group determine the simplicity of the system with respect to the generating problem. A fourth condition requires the simplicity of the generating problem itself, and may be formulated thus:

4. *The realm of the generating problem must contain only those special problems which belong to it.* The difficulty of the condition lies in this: How can we determine that a special problem does not belong to a realm unless it is actually not contained in it? It is the same difficulty as the following: How can we determine that a definition is too broad?

This group of conditions has been of the utmost importance in the development of science. If we consider that any system can be made complete by the addition of auxiliary hypotheses (conditions), it will be evident that this group is the necessary correlate to the preceding group (of completeness), and not merely the satisfaction of an esthetic demand, as some hold.

Conditions of Logical Truth

1. The system must be a solution of its generating problem such that the preceding groups of conditions are satisfied.

2. The generating problem of the system must be a special case of the general problem of cognition, *i. e.*, each special system must be a special problem within the realm of the generating problem of cognition.

It is evident from these conditions that truth is the highest of all the critical conditions, and that the problem of "critique of cognition" could be formulated as the determination of the truth-value of a system. It follows further (from 2) that it is not the task of the single disciplines to determine the truth of their systems. This conclusion is so paradoxical and is liable to meet so strong an opposition, especially from the physicists, that it is necessary to consider it from another point of view.

Whatever these conditions may be, the proper method of determining truth, at least in physics, seems to be the *experiment*. It can easily be shown, however, that the experiment, whilst it is indeed the most powerful means of convincing us of the possible truth of a system, is nothing but the method of the conditions of completeness. In so far, and in so far only, as their satisfaction is required by the condition that "the system must be a solution of its generating problem" (1) can the experiment be considered as a negative criterion

of truth. Foucault's experiments to determine the velocity of light in water left no doubt about the superiority of the undulation theory. They did not, however, prove the truth of Huyghens's theory, but only the incompleteness of Newton's; or, as Foucault himself expresses it, "The last conclusion which I draw from my experiment, is, therefore, the proof that the emission hypothesis is not in harmony with the phenomena of light." Again Fresnel's experiments in the interference of rays of light, as they were a direct consequence of the undulation theory, strongly increased our conviction of the truth of this hypothesis; but what they proved is the completeness of Huyghens's system with respect to a certain group of special problems.

This granted, the conclusion might be drawn that the conditions of completeness are the conditions of truth.[10] It is obvious, however, that this would mean to ignore the other conditions. But we are thus led to the question: Is the set of conditions that we have given complete, is it simple, pure, etc.? In other words: this set of conditions[11] can itself be considered as a system and therefore be examined by its own principles. I call it the "self critique" of the critical principles.

KARL SCHMIDT.

PEQUAKET, N. H.

CLEARNESS, INTENSITY, AND ATTENTION

MUCH has been made in late years of the distinction between intensity and vividness, or clearness, which attracts our notice in the study of attention. But it appears clear to the writer that the distinction is one merely between intensities of different types. Most of the studies of our psycho-physicists in this direction are given to sensational intensities, and in this field they observe intensity as contrasted with clearness, vividness, distinctness, but fail to take sufficient note of the fact that this contrast appears in other realms than the sensational.

Titchener tells us[1] that "the problem of attention centers in the fact of sensible clearness": and[2] that "clearness is an independent attribute of sensation" which "may vary independently of intensity"; although "change of clearness always involves a change of intensity as well." One can not but hesitate to question so positive a statement of so thoroughly equipped and thoughtful a psychol-

[10] This is essentially, if I understand him correctly, Professor James's theory in his book on "Pragmatism."

[11] As was first pointed out to me by Mrs. Schmidt.

[1] "The Psychology of Feeling and Attention," p. 182.

[2] *Op. cit.*, p. 219.

ogist; and yet one is naturally led to note the limitation of his view, as thus stated, to sensational considerations, and to recall that a large part of our attention experiences are within the realm of thought and, therefore, in our view non-sensational. One who does so must at once concede that the distinction is one that is most commonly and very frequently observed in cases where sensations are compared with ideational presentations, and that the sensations which, in distinction from the sensations called intense, are called vivid (*e. g.*, those located in the retinal margin) are closely allied with ideational presentations. It seems clear that the frequent experiences of this comparison between sensational and ideational presentations in every-day life give the basis for the distinction considered when careful laboratory tests are made.

Where intensities of diverse types of presentations appear coincidently we should surely not be surprised to find them contrasted and given different names. An elemental intensity corresponds with an emphasis of activity within a part of the nervous system, and such emphases are more likely to be distinctly marked in those parts of the nervous system which receive stimuli directly from the environment than in parts which receive their stimuli from within the system itself. As the emphatic activities in the nervous parts which are in direct relation to the environment correspond with our sensations, we should expect to make note of intensities most frequently in connection with sensations—as is evidently the case; and we should find ourselves naturally considering sensational intensities when the thought of the meaning of the word intensity occurs. If then we are inclined to give special names to intensities as attached to special classes of presentations, we should naturally use the word intensity to refer to sensation, and choose a special name to apply to the intensities of a less narrow nature which are due to action within the mass of the psychic system, when the two forms are placed in contradistinction. And this, in my view, we do in setting "intensity" over against "vividness," or "clearness."

The meaning of this may be more clearly seen if we consider in some detail the contrast between sensational and ideational intensities. An intense presentation appears within some minor psychic system. This minor psychic system may be of greater or less breadth. It is to be expected, therefore, that comparison will at times be made between an intensity within a narrow minor psychic system (let us call this intensity N) and an intensity within a broad minor psychic system (let us call this intensity B). It may well happen also that the intensity N, which is related with the narrow system, may be one which is strongly influenced by the action of physical stimuli and not markedly affected by the reaction of the

related psychic system as a whole: while, on the other hand, the intensity *B*, which is related with the broad system, may be one which exists as such almost entirely because of the reaction upon it, as a whole, of the psychic system with which it is related. *N*, that related with the narrow system, may well be a marked case of what men usually, but without great accuracy, speak of as involuntary attention, *e. g.*, the light of the candle upon which my eyes are fixed —the twinge of neuralgic toothache caused by the stimulation of an exposed nerve. *B*, that related with the broad system, may well be a marked case of what we all agree to call marked voluntary attention, provided the intensity is related with, and supported by, the broad mass of the psychic system as a whole, *i. e.*, by the self.

Now two such intensities may well appear at what seems to be one and the same moment; and we should not be surprised to find their contrast leading us occasionally to give them different names as we have seen that we do, using the term intensity to refer to the narrower sensational intensity, and the word vividness to refer to the broader ideational intensity.

Vivid *B* and intense *N* as differentiated from *B*, are both partial presentations. The characteristic of the vivid *B* is this, that at the moment observed it persists in attention notwithstanding the fact that, when both *N* and *B* are held in reflection and compared, *B* is appreciated as less intense than *N*, so that we speak then of the intense content *N* as contrasted with the vivid content *B*. What we note *in this moment of comparison in reflection* is the fact that attention becomes fixed upon *N* (the so-called intense element) as more emphatic than *B* (the so-called vivid element), and that in that moment *B* tends to disappear from attention, while *N* tends to persist. But at the same time we also note that *apart from this moment of reflective comparison* the reverse is the case, *i. e.*, the "vivid" *B* holds attention as against the "intense" *N*.

We often experience cases where attention to partial presentation *N* becomes approximately equivalent to attention to partial presentation *B*. It is in such cases of balanced attention that the psychic system is appreciated as reacting to fasten *B* in attention to the exclusion of *N*, or, in other words, to sustain the "vividness" of *B* to the exclusion of the importance of the "intense" *N*.

The actor on the stage may have a sharp neuralgic toothache which he may experience during the whole time given to his acting, but the relatively unimportant psychic systems involved with the apprehension of the toothache, as compared with the very broad and important psychic systems involved in the acting of his part in the play, may lead him to say that while the toothache was more intense, the conception of his part in the play was more vivid. In

the one case the intensity was due to a physical stimulus and involved relations with relatively narrow psychic systems; in the other case it was the reaction of the mass of the whole psychic system that gave the importance to the psychic element and gave to it its intensity, which in such cases we call its vividness, or clearness, as you will.

It thus appears that the facts upon which Titchener bases his statements, above quoted, may all be interpreted in terms of the shifting of attention.

When we look upon the clearness of a sensation as distinct from its intensity we are considering the relation of the sensation to a very different psychic field than that involved when we consider what we call the intensity of the sensation as such.

Clearness, I take it, is but another name for vividness or distinctness. Both of these are terms employed to describe intensity in fields of a broader nature than those in which the typical intensity, viz., sensational intensity, appears. When we consider clearness or vividness or distinctness we are dealing with attention in a field of broader significance than when we consider intensity; in the latter case we deal with attention in a field of narrower significance.

That no such distinction as that made by Titchener will hold seems clear in the very fact which he asks us to note, viz., that "change of clearness always involves a change of intensity as well." This in my view is but another way of saying that what in one field appears as a change of what we commonly call clearness or vividness, in another field appears as a change of what we commonly call intensity.

If we thus agree that intensity and clearness are names for the same characteristic in different settings, then we find no difficulty in accepting Pillsbury's statement,[3] that "attention is fundamentally a change in clearness of some one phase or aspect of a mental process."

If we thus use the word intensity as the generic term, we may then say that attention experience appears as not identical with intensity, although it involves intensity; it is intensity as related to the manifoldness of all the rest of the field which makes the total presentation of the moment of consideration. Both the focus and the rest of the field of attention are noted as involved in the whole complex presentation of the moment, the focus being the center of most marked intensity.

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[3] *Op. cit.*, 1, 11.

DISCUSSION

"ANTI-PRAGMATISME"[1]

IT is the contention of some pragmatists that the social and ethical implications of extreme intellectualism are essentially undemocratic and hierarchical. They insist that the conception of thought as a totally distinct species of activity, complete and sufficient unto itself, capable even of "furnishing its own material," leads in social theory to the notion of thinkers as constituting a distinct and "privileged" social class, a sort of priestly "caste" (employing the term frankly used by the author of "Anti-Pragmatisme") whose function is to keep the fires burning on the altar of "Pure Truth." They believe that a "caste" system of psychology and logic involves, both as antecedent and consequent, a "caste" system of society.

And it is to be noted, they add, that this view of thought and the thinker can not plead in its defense the principle of "division of labor." Division of labor means an interdependent differentiation of function in a common process working toward a common end. But by hypothesis pure thought pursues only its own end, by its own method, and acknowledges no dependence upon, nor cooperation with anything else. The thinking class, as such, is a law unto itself. It need render no account to the others. But the others must render an account to the thinker. For the thinker finds it no less difficult to live by thought alone than by bread alone. And somebody must furnish the bread. It has always been the boast of the intellectualist that pure thought "bakes no bread," and many are beginning to doubt whether it procures for us either God, freedom, or immortality. However, these doubters recognize that thought has its *part* in baking bread and in procuring God, freedom, and immortality.

But usually when pragmatists point out these reactionary social "consequences" of extreme intellectualism, they are promptly repudiated. And the vehemence of these rejections would seem to imply that if such "consequences" *did* follow they would constitute a sufficient refutation (rather "pragmatic" in character to be sure) of the doctrine.

In view of this, it is interesting to open a volume on "Anti-pragmatism" and find that these reactionary social implications are frankly, not to say naïvely, accepted at the outset and preached throughout with evangelical fervor as the only gospel of social salvation.

"La thèse qui a preside à la composition de ce livre, à savoir qu'il y a un conflit entre la vérité intellectuelle et la vérité morale, conflit

[1] "Anti-Pragmatisme," by Professor Albert Schinz. Paris: Félix Alcan, 1909. Pp. 309.

que toutes les ratiocinations du monde ne supprimeront pas, car il est irréductible." (p. 6.)

"*La vérité n'a rien à faire avec la vie.*" (p. 195.)

The subtitle of the volume is: "Examen des Droits Respectifs de L'Aristocratie Intellectuelle et de la Démocratie Sociale." And the reader is not left long in doubt about the author's view of these "Droits Respectifs." The legend for the introduction is: "Odi profanum vulgus et arceo." Of another chapter (p. 195) the prologue is: "La civilisation a été de tout temps une œuvre aristocratique, maintenue par un petit nombre." Again: "l'idéal démocratique. . . . Condamne le race Humaine à se couper la tête." (p. 219.)

If, in these days of mixed motives and crossed wires in philosophic thinking, such simple consistency were found in the premises of a volume by a professor of philosophy it would be regarded with suspicion. The reader would fear a trap. But there is no question of Professor Schinz's ingenuousness. And the pragmatic critic might make short work of comments by saying "Very well, if you want a 'caste' system of society, that's the kind of theory to hold."

This charming absence of "the art of philosophic dissimmulation" further appears in much of Professor Schinz's defense of intellectualism, which is openly (what the pragmatist would insist it must be implicitly) pragmatic in its method. Intellectualism is to save us from the "consequences" of pragmatism—especially the American brand of pragmatism—which are: a crass materialism, a charlatanistic "opportunism," and philistinism in general, in which all moral control breaks down, and which is to end in "humanity cutting off its own head."

With a cheerful and jaunty pessimism Professor Schinz confesses that he believes that his defense of pure thought is a forlorn hope. He, too, is persuaded that "pragmatism has come to stay"; not because it is true, "but precisely because it is false," for "from the social standpoint, the false is preferable"! (p. 195 ff.) "The victory is not to him who has the better order of syllogisms, but to him who has the best vitality." (p. 209.) "What a beautiful reductio ad absurdum of pure thought!" the pragmatic reader will exclaim. "Is falsehood then more vital than truth? Will humanity have more vitality with its head off than on? Is the syllogism a symptom of general debility? And what of the author's plea for happiness? Is the syllogism the archetype of human bliss? And what shall we say: 'Better fifty years of pure intellect, than a cycle of social-comradeship?' " (Though doubtless the syllogism plays a *part* in social-comradeship.)

As for the general issue of democracy *versus* aristocracy, the

democratic reader will probably say that most of Professor Schinz's case for aristocracy rests upon a very antiquated conception of democracy, viz., as "the intellectual and social equality of all individuals." Also they will say that in his analysis of the evils of democracy; *e. g.*, bossism, as due to the persistent, but ignored, and therefore mutilated, working of the principle of aristocracy under an attempt at democracy, the author seems blissfully unaware that by the same token these evils, especially that of bossism, might be the symptom of a handicapped and mutilated working of democracy; that by the same logic, bossism might be diagnosed as social appendicitis due to the survival in the body politic of the hypertrophied veriform of an aristocratic regime. And they will add, that the cure for this trouble is now fortunately well recognized.

Of the more technical presentation of the author's standpoint many will not only fail to find anything new advanced in support of intellectualism, but are pretty sure to complain of a lack of anything like an adequate appreciation of the real issue. And in support of this they will cite that the only exposition of the nature and meaning of purely "intellectual" and "scientific" truth as opposed to "social" or "moral" truth, is an appeal to the formal law of contradiction and to Kant's "irreducible" antinomies of space, time and causation. (Though many think that even Hegel made a pretty good "stagger" at their reduction.) But this appeal to the law of contradiction and the antinomies which the author regards as sufficient support for intellectualism brings us only in sight of the real problem, which concerns precisely the *nature* and functions of this law of contradiction and of the antinomies. And doubtless some blasé intellectualists whose minds have been "debauched by learning" may be surprised to find that the discovery of "certain laws of heredity with their fatal consequences," exemplifies the conflict between scientific and moral utility! "Dans de tels cas ca Science est mauvaise, et n'est plus utile que dans le sens scientifique"! (p. 50.)

The author attempts to make a test case for his central thesis of Professor Dewey's monograph on "Logical Conditions of a Scientific Treatment of Morality." And here again the author's capacity for getting at the problems involved may be judged from the fact that many of his points are based on alleged quotations which completely reverse the meaning of the original. For instance we read on page 86 of Anti-Pragmatisme: "If Dewey declares that while psychology shows that the moral judgment is determined by contingencies, psychology tells us nothing of the content of the moral ideal, and that therefore we must have recourse to transcendental considerations of metaphysics," etc. The original in the mono-

graph of Dewey (p. 21), reads: "Hence it is *futile* to insist that psychology can not give the moral ideal and that consequently there must be recourse, etc." Another illustration: "Anti-Pragmatisme" (p. 80) reads: "He (Dewey) tells us that when the action of character (or of subjectivism) becomes preferential in its effect, then the judgment *by this fact* becomes logical. But what then? As this character is not preferential in the scientific judgment, is the scientific judgment no longer logical?" But what Professor Dewey is very careful to tell us in the paragraph (The Monograph, p. 16) referred to in these quotations, is: (1) That character becomes preferential in effect when the situation is such that the part which character plays in the judgment has *"to be recognized";* when it is such that it "is necessary to take notice of it." (2) That, when the influence of character does *thus* become "preferential in effect," *character* (not the "judgment"), "as a practical condition, becomes logical." (Italics mine.) And here "becomes logical" means passes into, becomes the subject of judgment. Obviously the substitution of the term "judgment" for "character" makes a very pretty case of "contradiction" over which the author grows merry. As a fully guaranteed device for "discovering" contradictions and as a source of self-entertainment for one who enjoys them as much as does the author of Anti-Pragmatisme, this method is commended.

Into the issue itself we can not go. Suffice it to say that Professor Dewey is showing both the connection *and* the distinction, or rather the connection *through* the distinction, between logic and ethics. But his critic's method of thinking can not follow this. For him, if logic and ethics are different, they must be independent, or even "opposed."

This lack of recognition of connection and continuity in and through distinctions continues, of course, throughout the discussion of James and Schiller, to whom most attention is given, and accounts for the "captious" character of the criticism. Apparently the author regards it impossible for a pragmatist to use the terms "intellectual," "logical," or "scientific" without "fatal contradiction." But Professor Schinz does not distinguish between "intellectual" and intellectual*ism,* between "rational" and rational*ism.* Intellectualism or rationalism is the doctrine of an independent self-enclosed and self-sufficient world of pure thought. That pragmatism opposes intellectualism and rationalism does not mean that it is opposed to intellect or to reason; nor that is it a substitution of faith, or will or feeling, or anything else for thinking—for "abstract," "logical" thinking. On the contrary it holds that "abstract" thinking is one of the necessary constituents of a rich and

efficient type of experience; and that the higher the degree of abstraction of which thought is capable, the richer the possibility of the experience in which it functions. But pragmatism does teach that whatever heights or depths of abstraction thought reaches, it can not finally cut loose from the world of immediate impulse, instinct and feeling, and set up an independent, self-enclosed empire of pure intellect.

A. W. MOORE.

UNIVERSITY OF CHICAGO.

SOCIETIES

A REPORT OF THE MEETING OF THE NORTH CENTRAL ASSOCIATION OF TEACHERS OF PSYCHOLOGY IN NORMAL SCHOOLS AND COLLEGES

REPORT OF THE SECRETARY

A MEETING of the North Central Association of Teachers of Psychology in Normal Schools and Colleges, was held at the University of Chicago, April 3, 1909. The sessions were held in Emmons Blaine Hall, the School of Education. About forty teachers of psychology from normal schools and colleges in seven of the North Central States were in attendance.

ABSTRACTS OF PAPERS

A Way of Simplifying the Introductory Course in Psychology: ROWLAND HAYNES.

The purpose of the introductory course is the formation in the student of habits of observation, explanation, and application to daily life of the facts observed. Hence the course may be simplified by grouping around the topics of description of consciousness, states and processes, explanation and function for present adult life. In the study of explanation the student should come to see that an explanation is the pointing out of the relation of invariable antecedent to consequent between the group of facts to be explained and certain other groups of facts. Hence the course may be further simplified by arranging the favorite groups of facts to which psychology goes in explanation thus: (1) Psychological facts of other conscious states and processes, (2) physiological facts of the make-up and growth of the nervous system, (3) facts of child life, (4) facts of race history, etc. This indicates the use to be made of the functional view of consciousness in explanation. Pointing out the need for adjustment or the value of certain processes for adjustment, gives no explanation. It is necessary to point out the invariable

antecedents in the situations in race, or individual history which caused the adjustment.

Teaching the Organic Conception in an Introductory Course: J. B. MINER.

The paper called attention to the inadequate summaries of the organic conception of the mind to be found even in text-books which emphasize the functional and genetic points of view. The writer suggested that the difficulty which the students have in grasping the organic conception when applied to the mind might be partially overcome by paying more attention to a carefully summarized description of the organic nature of consciousness. He set forth, by way of illustration, the four features which he had used in defining the conception and the examples of mental facts which he had found most serviceable under each. The characteristics were the following: First, that the mind is made up of processes, each of which has its specific purpose in adapting the organism to its environment; second, that these functions are mutually dependent and organized into unified conduct; third, that the mind develops during the individual life; fourth, that the mind through inheritance is related to the past activities of the race. It was further suggested that it might be wise to point out the striking difference between the mind and physical organisms in that consciousness does not have a continuous observable existence. This makes it desirable to describe man scientifically as a psychophysical organism, and speak of the organic nature of the mind rather than of the mental organism. The writer suggested that he had found that this summary might well be introduced late in the course, for example, after the treatment of the cognitive functions.

A Device—By which Physiological Concepts may be Employed in Teaching Psychological Processes: N. A. HARVEY.

Every mental process is accompanied by a corresponding physiological change. This change always, or nearly always, takes the form of the transmission of a nervous impulse through a nervous arc. This nervous impulse may be discussed in terms of a current. Every current, whether it be a current of water, of electricity, or a nervous current, has certain elements that make it a current. In every current there must be a conductor, some means of insulation; the current always encounters resistance, it is directed in its course by some means, it exercises some kind of an influence upon the surrounding space, it is caused to flow by some kind of a force, and it is capable of doing some kind of work. In the case of the nervous current we shall be able to identify every element of the current with its psychological concomitant.

As there is one word, current, to express all the physiological elements discoverable in the nervous impulse, so we may employ a single word, psychon, to express all the concomitants of the physiological current elements. It is preferable to use a new word, to express this new idea, rather than to use the term "states of consciousness," or "consciousness," or "stream of consciousness," or "mind." It is believed that every relation that psychology has yet discovered between the various mental processes can be described in terms of the psychon, or in terms of their physiological concomitants.

It is impossible from the very nature of the case to prove directly the propositions here advanced, and it is probable that what actually occurs is a hundred times as complex as what has been indicated here. But the value of an hypothesis does not depend upon the possibility of demonstrating its truth. It enables us to picture in luminous terms the relation existing between mental processes.

Conflicting Ideals in the Teaching of Psychology: JAMES R. ANGELL.

(This paper will be published in the *Educational Bi-Monthly.*)

A Written Recitation and a Class Experiment: C. E. SEASHORE.

An explanation was given of a method of conducting a written recitation by which large classes may be handled. "There are," Professor Seashore stated, "at least three advantages in this mode of recitation; it encourages and secures systematic analysis of the text by the student when he is at ease in his room; it leaves the class-hour for lectures, demonstration, experiments, and discussion; it secures full and specific recitation from every student every day, and develops logical presentation." He then described a form of class experiment which complies with the following principles: "(1) Every individual student shall take active and responsible part in the experiment; (2) the experiment shall be sufficiently intensive to make it vital, and (3) each step in the experiment shall be explained and interpreted in a printed leaflet."

It was recommended that psychologists cooperate in producing a series of such experiments, each to be printed separately in sixteen-page leaflet edited by a representative committee. An illustration of such an experiment was given.

Relearning a Skillful Act: An Experimental Study in Neuro-Muscular Memory: EDGAR JAMES SWIFT.

The experiment consisted in relearning the muscular feat of keeping two balls going with one hand, catching one and tossing it while the other was in the air. The original investigation, in which the skill was first acquired, was completed six years before this memory study was undertaken. It was found that the subject had lost a large part of his former skill, but the process of relearning was

rapid, requiring only eleven days against forty-two in the regular learning practice six years previously. Educational applications were suggested.

The Value of Social Psychology: ERNEST TALBERT.

An adequate social psychology must proceed from the analysis of fundamental instincts, "dispositions" and sentiments, showing how they work out in the life of groups. Our prevalent procedure, with over-emphasis upon cognition, exaggeration of the possibilities of laboratory experiment, the ignoring of the place of feeling, and an individualistic attitude, has not been altogether satisfactory, and the failure of analysis and application shows itself in a crude pleasure-pain political economy, individualistic political and legal theory, and considerable chaos in educational practice.

For college students the study of social psychology has some points of advantage over the conventional treatment of individual psychology. A discussion of public opinion, instincts and their working, suggestibility, the mob, custom, conventionality, the imitation cycle theory, etc., with reference to and criticism of such representative writers as Wundt, Tarde, Baldwin, Ross, and McDougall, seems to give much of the introspective practice of the "pure" psychology, combined with a measure of objectivity and an appreciation of the relation of the individual to the group. With its group-background it gives greater significance to the individualizing forces, creates a sense of the importance of the educational process as the technique of carrying over the psychical inheritance from generation to generation, and, as regards religious implications, acts as an antidote to a worship of the group excesses peculiar to "revivals."

It is not a thoroughgoing statement to say that we must *now* proceed to the stage of application of our psychological technique. There has always been some application: the problem is to determine in what directions the use shall be put. In so far as we do apply its findings, psychology is reconstructed in content and standards. The need is to enlarge the scope of its reaction upon social life.

A Course in Applied Psychology for Teachers: FRANK G. BRUNER.

The experience of those associated with teachers in an administrative and professional way has led to the conviction that the stock courses in psychology, those which treat of it in a systematic, analytic or genetic way, have been, in general, strikingly barren of practical results. What teachers require is a more detailed study of certain mental processes involved in the acquisition of the ordinary schoolroom arts. And this study, too, needs to be pursued from the

view-point of the child's mental processes rather than from those of the adult.

In keeping with this point of view, there was then outlined a course in applied psychology which the writer projected and had pursued with some teachers in the Chicago public schools. The course consisted of a discussion and elaboration of data which the teachers collected in their own schoolrooms as a result of directed observations and experimentations, with reference to the ways in which children learn to read, grow into a number consciousness, can acquire accurate spelling habits most effectively, etc. These observations and experimentations were supplemented by readings and reports of published experimental results on the topics in question. The significant outcome of the course was this—that as a result of noting the seeming antagonism between the teacher's introspective method of getting results, and the child's observed method, there was generated a truer and more systematic teaching insight and intuition.

Social Psychology: CHARLES H. JUDD.

Psychology has reached the stage of applications. Its earlier work was the development of methods and the collection of material. The most fruitful line of application which can be developed at the present time is that which makes psychology the explanatory basis of the social sciences. Illustrations of the possibility of thus utilizing psychological material were given in full by taking up such problems from political economy as the history of credit. The earliest stages of barter are due to the fact that primitive man is purely perceptual in his intellectual process. Later he developed more and more elaborate systems of ideas which have their corresponding social institutions in our modern type of credit.

The use of tools is a second line of mental development which can be clearly traced. The earliest tools were made in a purely imitative way because the range of comprehension of primitive man was limited. As the ability to concentrate attention upon material and upon principles of construction grew, the complexity of the tool also increased and a complexity of the process of manipulation reached the stage which appears in modern industrial life.

The recognition of such explanations of human civilization as are suggested by the two examples above given, make it clear that a principle of evolution different from that of the biological sciences is necessary to account for human progress. The higher forms of intelligence are distinct factors in the forms of evolution. The ability to have ideas and to enlarge upon them is a distinctive human trait which the animals do not possess. The recognition of an intellectual type of evolution gives to educational practise a larger foundation than that which it can derive from any purely biological theory of evolution.

THE SECRETARY OF THE ASSOCIATION.

REVIEWS AND ABSTRACTS OF LITERATURE

What is Pragmatism? JAMES BISSET PRATT, Ph.D. New York: The Macmillan Co. 1909. Pp. xii + 254.

Professor Pratt's book is a most welcome and timely contribution to the discussion of pragmatism. It is an excellent summary of the current arguments against pragmatism, written in a very attractive style. The book fulfills the purpose stated by the author in his preface: "For though I have nowhere allowed the desire for simplicity and popularity to interfere with thoroughness of treatment, and though I have used technical language where exactness demands it, my aim has been throughout to give an exposition and critique of pragmatism which the general reader could follow without too much effort." Both the general reader and the technical one will be well rewarded by giving the book a reading, not only because, whether he is in sympathy with the author's standpoint or not, it will help to focus the discussion of the subject, but also because it has a spicy flavor of its own which makes the reading of it a pleasure.

The book is in the form of six lectures with the following titles: "Meaning and Method in Pragmatism," "The Ambiguity of Truth," "The Pragmatic View of the Truth Relation," "Pragmatism and Knowledge," "Pragmatism and Religion," "The Practical Point of View." In each lecture the author shows at what points pragmatism, to his mind, contains inadequacies or inner contradictions in dealing with the problem indicated by the title.

Professor Pratt selects three writers on pragmatism as spokesmen for the doctrine, Professor James, Professor Dewey and Dr. Schiller. He considers Professor Dewey's formulation of the standpoint the most logical and consistent of the three—a view that, of course, for Professor Pratt, makes Professor Dewey's pragmatism also the most reprehensible. It is obviously impossible within the limits of a book review to give an adequate summary of arguments, or refutation of them, even if one could! I shall content myself with pointing out where, on a few fundamental questions, Professor Pratt's discussion seems to me to fail in being convincing.

In the first place, most of the serious difficulties with pragmatism which Professor Pratt encounters, seem to me to arise from a fundamental difference of opinion with regard to a problem which receives no explicit discussion in the book—the problem of reality. Professor Pratt's excuse for not discussing it is that it is "as yet in so embryonic and unformed a condition that it would be premature and unfair for a non-pragmatist to try to state it" (p. 178). Although most of the problems which Professor Pratt discusses hinge upon one's view of the relation of the idea to reality, he approaches them, nevertheless, with a preconceived conviction that reality, in order to be anything more than mere subjective experience, must have its *existence* independent of the thought which knows it. The contention of pragmatism is that we may regard reality as constructed in the knowledge process, and yet may distinguish it sharply from the mere subjective experience which is the instrument of

its construction. Professor Pratt is willing to admit that an existence postulated as independent of the knowledge process can never itself get into knowledge, but he insists that the only way we can keep from "lifting ourselves by our boot straps" is at least to *mean* such a reality —a proceeding in which he can see no difficulties but manufactured ones. I do not feel that I should be any more flippant than Professor Pratt is at times if I should forthwith accuse him of being, after all, a pragmatist in his fundamental assumption, for his only justification for assuming a reality whose existence is independent of the thought which knows it, is the pragmatic one that he can not see how to make his universe work without it.

The deadlock between Professor Pratt and the pragmatists on the subject of truth is only another manifestation of their opposed views of reality. For Professor Pratt, of course, truth is correspondence between an idea and an already existing reality. The difficulties with this view of truth which the pragmatist points out do not seem to him genuine. He is quite undaunted by the impossibility of ever *testing* that kind of correspondence. To him there is no insuperable difficulty in holding that the "trueness" of an idea lies in its correspondence with an already existing reality, while the test of its truth is the consequences to which it leads. He accuses the pragmatist of committing a *logical* error when he identifies the trueness of an idea with the process which tests it. But surely it is within the *logical* possibilities that the trueness of an idea should be constituted by its successful functioning, or that, in Professor Pratt's words, its "trueness" and its "truth" should coincide. The view seems *illogical* only to one who is already committed to the conviction that trueness must exist before it can be tested. Nor is it a damning admission to the pragmatist to agree that a given content of thought may be truth under one set of circumstances and falsehood under another, because for him truth is never inherent in the content of an idea, but always in its function. One is tempted to feel that Professor Pratt's refutation of the pragmatic view of truth consists in showing that the conclusions to be drawn from it are not in accord with a metaphysics which pragmatism expressly repudiates.

In dealing with the problems of meaning and method, Professor Pratt seems to me to have failed to interpret pragmatism correctly in two respects. When he makes the statement that "the distinction between a red house and a green house does not consist in a difference of practise". (p. 18), he is implying that the ultimate qualities of sensation are parts of meaning, a view which is certainly not that of the pragmatist. The sensory qualities he accepts as the ultimate given content of experience behind which we can not go. In and of themselves, redness and greenness have no meaning. It is only as they serve to guide action that they acquire it. There is no absurdity in the statement that the difference in *meaning* between a red house and a green one does, as a matter of fact, go back to a difference in practise.

Secondly, Professor Pratt's failure to find the pragmatic view of meaning as inherent in anticipated consequences satisfactory, is due, at

least in part, to a failure to follow the pragmatic method to the extent of selecting a total concrete situation from actual experience as a basis for reasoning. An enlightening distinction may be made between "dead" and "live" judgments. A dead judgment is the mere statement of the outcome of some completed process of thought. One can not draw reliable conclusions about the thought process from these shells which are left behind after the animal is dead and gone. The judgment must be resuscitated in imagination, and regarded *as it was when it was made.* The illustration taken from Professor James of the meaning attaching to ideas at the last moment of existence is for this reason an unfortunate one. But if Professor Pratt would sit down and really try to imagine with the utmost vividness possible what his state of consciousness would be if he were knowingly facing the last moment of existence, I think he would be almost willing to admit that the meaning would have evaporated from all ideas, except in so far as he could forget the state of affairs sufficiently to adopt the habitual attitude of future reference. No man under those circumstances would *be* reflecting on the problem as to whether Mr. James or Mr. Bradley wrote "Pragmatism." Professor Pratt constructs a situation which is impossible, and then argues most improbably about what would happen if it were true. Moreover, if he were really putting himself for the moment into the pragmatist's shoes, he would not talk about the past consequences of an idea. The pragmatist insists that one must take the idea at the moment of its existence, and in its actual setting, in order to judge wherein its meaning lies. At the moment of its existence, an idea has no past consequences, it can have only anticipations of future ones—anticipations derived, to be sure, from past experience, but whose present importance is that of a guide in dealing with the situation at hand.

Finally, bearing in mind the criticism just made, I can not see why the pragmatist should object to as broad an interpretation of his doctrine as Professor Pratt wishes. The pragmatist does not contend that his theory of meaning is entirely new in the history of thought, but merely that it has never before been consistently elaborated. Professor Pratt is quite right in saying that one can find passages in Mr. Bradley's writings which state it excellently. The point the pragmatist makes is that a philosophy which regards reality as independent (in its existence at least) of thought, as Mr. Bradley does, can not consistently hold the view that meaning is inherent in consequences. Just as truth from such a standpoint must consist in correspondence with "reality," so meaning must logically be regarded as reference to "reality"—a concept quite distinct from that of meaning as constituted by consequences. The pragmatist's quarrel with Mr. Bradley is that he finds both concepts of meaning unreconciled and, as he believes, unreconcilable, in Mr. Bradley's writings. The problem of meaning, like that of truth, brings us back to the opposed views of the metaphysics of reality, and on this ground, it seems to me, the battle must be fought out.

HELEN THOMPSON WOOLLEY.

OMAHA, NEBRASKA.

The Problem of Logic. BOYCE GIBSON. New York: The Macmillan Co. 1908. Pp. ix + 500.

Mr. Gibson tells us in his preface that the work under consideration has "grown up and taken shape under the chastening influence of college teaching." It is, therefore, not to be expected that the volume should be a contribution to the advancement of logical thought, but the reader may demand of it a clear and consistent point of view with respect to the matter involved, and in this he will not be disappointed. It is a work preeminently suited to the needs of the teacher of logic who is annoyed by the lack of precision and consistency in most contemporary works and who lacks either the time or the interest to reorganize thoroughly his own opinions.

It is impossible to consider a book such as this in detail, but there are certain general features that at once warm our hearts: for example, while current formal logic does not loudly demand a philosophic background, the need is nevertheless implicit, and it is refreshing to find it frankly recognized: "I am, indeed, persuaded that the drift of the present work is convergent with the line of the Pragmatic Reformation, and that the stress laid on relevancy is a vital bond of union between ourselves and the pragmatists." The author's philosophy is not thoroughly pragmatic, but its idealistic elements do not bear weightily on logic. Mr. Gibson offers the following provisional definition of truth: "Truth is the unity of ideas as systematically organized through the control exercised by relevant fact," and, throughout, the constant references to this control are of primary importance.

From a reviewer's point of view the book falls into four parts: (§ I.–II.) the relation of logic to language, *i. e.,* the function of words, definition, the predicables, division, classification, scientific terminology and nomenclature, connotation and denotation, concrete and abstract terms; (§ III.–IV.) the logical proposition, its forms, meanings, and relations to the laws of thought; (§ V.–IX) formal deduction and its fallacies; (§ X.–XIV.) induction.

The first part is developed under the concept of meaning, or that which tells us what an object is in relation to a specified interest or purpose. Its details might well be the grounds of considerable comment, but such comment would be in the interest of greater simplicity and propriety in the use of language only. For example, is it necessary or expedient to define *intension* so that *intension* equals *connotation* + *denotation* (p. 72)? Mr. Gibson has at least expressed himself clearly, although he seems to us to have been everywhere too anxious to make a place for traditional expressions instead of meditating on the utility of Occam's razor.

The concept of meaning dominates the second part of this work also. The most interesting feature here is the treatment of the principle of identity as an Hegelian identity-in-difference (p. 97), in which form, the author seems to think, this law may be *the* law of thought, although he adds, as a concession, the laws of contradiction and of excluded middle. To Professor Stout is attributed an important section disclaiming, on

excellent and sound grounds, the relating of these laws to time. The forms of the traditional analyses of propositions are retained and given meaning in rather satisfactory fashion, considering that modern symbolic logic is wholly ignored; this appears, for example, in the emphasis of "genuine logical denial," and in the assertion of the irreducibility of hypotheticals to categoricals (p. 139) which assertion has meaning, but probably not within the purpose of formalism.

Formal inference is introduced as a substitution of the validity interest for the truth interest, and the extensive point of view is "selected as most adequately meeting the requirements of a formal logical treatment." Existential questions which threaten the validity of Darapti, Fesapo, and Bramintip, are entirely untouched, and the short section devoted to unorthodox syllogisms, such as "X is greater than Y, Y is greater than Z, etc.," is inadequate and somewhat inaccurate: for example, the copula in the simple categorical syllogism is stated as = (p. 251)—an absurdity when the extensive point of view has been adopted. The examples are excellent and especially so in the well-classified treatment of fallacies, which includes detailed formal discussion of such classic arguments as Zeno's paradoxes (p. 290), and the Litigiosus (p. 293). Inference is justified against Mill's criticisms because its end is not novelty but logical irresistibility.

The section devoted to induction is most touched by the pragmatic wand. Fidelity to relevant fact is the expression of the truth interest, and therefore induction proper includes Mill's induction, deduction, and verification. Why might not the book have had a better form and expressed this in its order of exposition? Again, the working out of the examples is most commendable (cf. the development of astronomical theory, pp. 329–333, and especially, Ch. XLVI., pp. 422–444). The inductive postulate is determinism.

The author promises a sequel that shall deal "with the logical problem in its more philosophical aspects" (p. viii) and which may discuss the principles of mathematics in their logical bearing. But while not contesting the interest and importance of symbolic logic, the incorporation of it into the massive promised system is looked upon as improbable, or impossible, and if the incorporation of it were to mean a new and exhaustive statement of its results in their details the reviewer would heartily say Amen! but when symbolic logic, moved by the consistency interest, seems able to do away with the distinction between positive and negative propositions, and when Mrs. Ladd-Franklin has demonstrated that one simple form underlies all syllogistic, it is unfortunate that those whose interest moves them to undertake such exhaustive treatments of logic should not try to incorporate some of these results in their systems, and so make way with at least a part of that cumbrous machinery inherited from antiquity, which logicians still accept, patch up, and transmit to the next generation.

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The Relations of Comparative Anatomy to Comparative Psychology. LUDWIG EDINGER. Translated from the German by H. W. RAND. *The Journal of Comparative Neurology and Psychology,* November, 1908.

The aim of this article is to point out how comparative anatomy studied in connection with the observation of the organism may be of service to comparative psychology.

The author divides the brain into the palæencephalon and the neencephalon. The former, which is the oldest part of the brain, is present in all forms of life from the cyclostomes to man. Its general type remains unchanged throughout the evolutionary scale although the different parts may vary greatly in size. That a knowledge of the palæencephalon is of value to the sense psychologist is shown by a study of that part of it which has to do with the sense of smell. The anatomy of this portion of the brain reveals a constant arrangement and microscopic structure in all vertebrates from man to the cyclostomes. Because of this fact we may infer that all animals which possess this structure smell, even when we can not infer anything very definite from their behavior.

In the next place, a knowledge of anatomy reveals new problems for the sense psychologist. For example, in birds we find a large fiber tract which leads from the nucleus of the trigeminus, and terminates in a field known as the lobus parolfactorius. In fact, in all vertebrates up to mammals there evidently exists a sense which is localized about the mouth and has its center in the lobus parolfactorius. This lobe which is well developed in birds and certain lizards, and also in those animals in which the snout plays an important part, has almost entirely disappeared in man. Here we have an oral sense which is of the greatest importance to certain forms of life, yet it is a sense about which we, as yet, know almost nothing.

The study of the bony fishes is especially important because in them the palæencephalon alone is present. By a careful study of their behavior we can determine the activities which are characteristic of the palæencephalon. And "since it is certain that the palæencephalon persists quite unchanged even after a well-developed neencephalon has been added to it, there is no ground for regarding those activities which we recognize as palæencephalic in one class of animals as anything else, or as otherwise localized in higher animals. Furthermore, we may regard an entire series of activities as common to all vertebrates, and we may then seek to ascertain how other activities are added to those when a new structure is added to the palæencephalon. All sense impressions and movement combinations belong to the palæencephalon. It is able to establish simple relations between the two, but it is not able to form associations, to construct memory images out of several components. It is the bearer of all reflexes and instincts." If the palæencephalon can not form associations, then it is clear why animals which possess only the palæencephalon do not respond to certain sense stimuli, for these stimuli can not mean anything to them. It is the biological stimuli alone which arouse them to action. It is evident that here is an inviting field for the psychologist.

The neencephalon, the bearer of the cortex, is present as a rudiment even in the selachians, and becomes more and more conspicuous in the amphibians, and especially in the reptiles. It is in the neencephalon of reptiles that there appears for the first time a mechanism which provides for the possibility of association. We can now "declare with certainty that the oldest cortex becomes connected with those parts of the palæencephalon which serve the sense of smell and the oral sense, and subsequently other cortex regions are gradually superadded to this."

With the appearance of the neencephalon occur marked changes in the behavior of the organism. These changes as they appear in the reptiles may be summarized as follows: They are no longer dependent on the sense impressions of the moment but are influenced by earlier impressions; they learn more easily than fishes and amphibians; they associate certain sense impressions which are connected with the olfactory and oral senses; to a certain extent they foresee, and they exhibit individual differences. These facts are without doubt due to the appearance of the neencephalon. It is here that the true psychological states make their appearance.

From the brain of the reptiles two types of brain are evolved. One, the type found in the lower mammals, develops through an increase in the size of the cortex; the other type, found in birds, is characterized by a marked increase in the size of the palæencephalon. Because of this marked increase in the size of the palæencephalon we find that the instinctive activities of birds are much more varied and complex than those of amphibians and reptiles. In fact, in birds the instincts are so complex that it is difficult to tell which activities are dependent upon the palæencephalon, and which upon the neencephalon. It suggests the possibility of there being neencephalic instincts. The fact that birds make more use of sight than reptiles is easily accounted for, as birds are the first to possess an optic tract leading from the palæencephalon to the cortex. This means that through association these optic impressions are capable of being utilized later, which is not possible in the case of reptiles.

In the mammals we find a brain which has so large a neencephalon that we may expect a subordination of the reflexes and instincts to associative and intelligent action. And this seems to be the case with those mammals in which the neencephalon includes more than half the bulk of the entire brain.

Although our knowledge of the mammalian brain is by no means complete yet it is sufficient to establish the point that man does not possess the greatest associative power in all fields, for the "degree of development of certain parts of the cortex makes it appear highly probable that many mammals far excel man in their capacity for observation and association in certain fields."

This article contains valuable suggestions for the comparative psychologist. In the first place, it shows that much useless work has been done because of the psychologist's ignorance of brain anatomy. For example, what folly to spend time in devising experiments to test association in animals which do not possess the associative structure!

In the second place, the article suggests the importance of choosing

certain animals for experimentation, not simply because they are easy to study, but because they represent important stages in evolution. It is evident that a careful study of the bony fishes which possess the palæencephalon alone, and the reptiles which possess a very simple neencephalon will be of marked value when it comes to analyzing the activities of the higher mammals.

But in order for the comparative psychologist to profit by these suggestions it is necessary for him to have a thorough knowledge of brain anatomy. This means that our students of comparative psychology can advantageously spend more time in the study of biology and anatomy than they have been doing.

In a field as new and as broad as that of comparative psychology it is highly essential that the work should be done on those animals where it will count for the most as a basis for subsequent investigations.

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JOURNALS AND NEW BOOKS

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band 15, Heft 2. January, 1909. *Aristoteles' Urteile über die pythagoreische Lehre* (pp. 145–165): O. GILBERT. – An argument to show that the Pythagoreans identified number not with things, but with what Aristotle would call the form of things, existing not apart from but in the things. *Die Entwicklungslinie der Philosophie im Kulturbereiche des Islam* (pp. 166–177): M. HORTEN. – In Gazali, A.D. 1111, the Thomas Aquinas of Mohammedanism, the four tendencies of early Islamic philosophy, blended. Then advance ceased till modern science invaded Islam in 1850. *Ein entschiedener Verfechter des Indeterminismus—W. King* (pp. 178–191): A. SEIBT. – King, a predecessor of Leibniz, found the will to be free in that it is not determined by the nature of its object, being able to choose the indifferent or the disagreeable. *Herder und Kant, Philosophieren und Philosopher* (pp. 192–196): G. E. BURCKHARDT. – *Die Kosmologie des Rauchopfers nach Heracleits fr. 67.* (pp. 197–229): W. SCHULTZ. – This fragment is an interpretation of the burnt offering, and in the words used and their arrangement is hid much numerical symbolism here first unraveled. *Aristote et le Traité des Catégories* (pp. 230–251): E. DUPRÉEL. – "The Categories" is post-Aristotelian, and contains nothing good except that which is found elsewhere in Aristotle's own works. *Die Tendenzen der platonischen Dialoge Theaitetos Sophistes Politikos* (pp. 252–263): J. EBERZ. – The last dialogue of this trilogy examined especially in reference to Plato's Syracusan experiences. *Jahresbericht über die Philosophie im Islam* (pp. 264–287): M. HORTEN. – Summaries of recent books and articles, such as to give the names of a multitude of writers and their works in metaphysics, ethics, logic, etc., from the early days of Islam to the present. *Die neuesten Erscheinungen. Historische Abhandlungen in den Zeitschriften.*

Bonilla y, San Martin Adolfo. *Historia de la Filosofía Española (desde los tiempos primitivos hasta el siglo xii)*. Madrid: Librería General de Victoriano Suárez. 1908. Pp. liv + 463.

Dickinson, G. Lowes. *Is Immortality Desirable?* The Ingersoll Lecture, 1908. Boston and New York: Houghton, Mifflin Co. 1909. Pp. 63. $0.75 *net.*

Jones, Rufus M. *Studies in Mystical Religion.* London: Macmillan & Co. 1909. Pp. xxxviii + 518. $3.50 *net.*

Spinoza's Short Treatise on God, Man, and Human Welfare. Translated from the Dutch by Lydia Gillingham Robinson. Chicago: The Open Court Publishing Co. 1909. Pp. xxiv + 178.

NOTES AND NEWS

THE May number of the *Psychological Review* is devoted to the influence of Darwin. The contents are as follows: "The Influence of Charles Darwin upon Historical and Political Thought": Arthur Twining Hadley; "The Influence of Darwin on Psychology": James Rowland Angell; "Darwin and Logic": J. E. Creighton; "The Influence of Darwin on Sociology": Charles A. Ellwood; "Darwin and Evolutionary Ethics": James H. Tufts; "The Influence of Darwin on Theory of Knowledge and Philosophy": J. Mark Baldwin.

DR. A. MÜLLER, director of the astronomical observatory on the Janiculum in Rome, is making use of the official papers in the case of Galileo, recently published, to prepare two works: "Galileo Galilei und das koperikanische Weltsystem" and "Der Galilei Prozess nach Ursprung Verlauf und Folgen." Dr. Müller presents the point of view of the Catholic Church.

PROFESSOR JAMES MARK BALDWIN addressed the superior board of education in the City of Mexico on April 30 on the functions and ideals of a university.

M. MILHAUD, professor of philosophy at the University of Montpellier, has been appointed professor of the history of philosophy in relation to the sciences at the University of Paris.

THE next meeting of the American Psychological Association will be held in Boston in affiliation with the American Association for the Advancement of Science.

PROFESSOR WILHELM WUNDT, of the University of Leipzig, has been elected a foreign associate of the National Academy of Sciences at Washington.

ANTONIO HERMANDEZ FAJARNES, professor of logic and psychology at the University of Madrid, died on March 27.

MAX MEYER, professor of experimental psychology at the University of Missouri, will go in the latter part of May to Europe on a year's leave of absence.

DR. J. F. MESSENGER, professor of psychology and education at the State Normal School, Farmville, Virginia, has been called to the University of Vermont.

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PSYCHOLOGY AND SCIENTIFIC METHODS

THE COSMIC CHARACTER

IN two earlier articles in this JOURNAL[1] the writer worked to grub out the roots of the pragmatic tree of knowledge. The tap-root he found to be a bare function, an universal activity, in its *primal* nature subpersonal and subconscious. In this paper I presume to deal with the apparent disparity between this God, as blind, subvegetable, metaphysical first cause, and the cosmic *character,* the God alive, upon which religious experience seems to depend.

I

First of all we must disabuse our minds of the notion that the cosmic character is *substantial.* The function in which life, whether human or cosmic, has its primal cause is practically universal and eternal; but only *practically.* The function is so long as life is; conscious activity (*sum cogitans*) is indubitable so long as the living doubt continues, but no longer. It is theoretically conceivable that all life, cosmic as well as human, should cease to be. In this catastrophic event the allegedly everlasting water-springs would have run dry, the tap-root of being would wither and dry up into nothing, the world-soul would flicker out in black death.

But there is in all this no occasion for pausing. Tested pragmatically, death and nothing are unthinkable concepts. Reflection upon them could not further, but only retard life. Their sole reality consists in their devilish power to defeat at every point the lust of rationalism, the senseless passion for *absolute* certainty. Meanwhile I find no thinkable connection between this absolute certainty and that *practical* certainty upon which active life depends.

The cosmic function is indeed *conceivably* perishable. But its decadence into death and nothing is *practically* unthinkable. Just because the cosmic life would in such an event flicker out into nothing, no one could possibly prepare his person for such a catastrophic end. The very last assumption with which our practical reason can get on is that of a functional activity, which, as active, is practically absolute and imperishable; and this no matter what disease, human

[1] Vol. IV., pp. 176–183, and Vol. VI., pp. 57–64.

or cometary, may assault its universal life. Let one be purely humanitarian in his humanism after the manner of the positivists. Even so, he must assume that energy in one form or another of human activity is unassailable. This is the live nub of the schoolman's insistence upon an eternal as *existent*. There simply *must* be an ἄπειρον, he thinks—a That in its root impractical, but in its potentialities inexhaustible and practically absolute.[2]

There has got to be an universal energy on which the phenomenal life of God and of men may draw endlessly. Of course men and God may not have this limitless credit in the great vault beyond. There is a certain speculative risk in all life, for that is the condition of life. Our lives, human and cosmic, depend upon taking the cash here and now and letting the credit go on so long as it will. It could only be after God and we were eternally dead and nothing, that the default of universal energy could reduce us to destitution and starvation; *i. e.*, never so long as we know ourselves.

In action the universal energy does function radically. It sloughs off dead parts from the cosmic organism and renews its withered members. The cosmic environment here and now is all on the side of health and perpetuity for those who are fit. And this is the first datum of the cosmic character: its inherent ability to preserve itself alive, its practical assumption that the energy within and without is everlastingly real and subject to all the drafts which can possibly be made upon it in the interest of life.

II

The implication of this first datum is that the cosmic character is an *achievement*. The universal energy must be drawn *upon*. In itself it is in the last degree impersonal, impractical, indifferent. The etymologists confirm this in their account of the verb of being. "To be" in its root-meaning is "to stand forth." The world-energy, I dare say, genuinely *is* only when it stands forth. The root-meaning of life is exclamatory, assertive, the will-to-power. I am: that I am.

Too often cosmic life has been conceived as an energy which must *needs* function in the form of a phenomenal, universal life: its standing forth is a necessary function of its eternal being. The Eternal thus unconsciously and without effort creates and maintains the best possible world: the world-soul does not actively draw upon, but is poured in upon, *by* the universal energy. But this postulate of willy-nilly creative energy goes against the grain of human experience. The fact is that the pouring-in process implies a certain suction on

[2] Poincaré says some clever things of this "something" as it stands in theoretical physics. See his "Science and Hypothesis," *e. g.*, p. 166.

the part of the living organism. The receiving of power from on high or from within implies a will-to-power. The first-class pessimists are wanting in this will; for them there is agony in the growing-pains of life's processes. They accordingly refuse to suckle themselves at the breast of being. They would sink back into the tireless, senseless That they set out from. It is not inherently impossible that one should in the end utterly dam the inlets of the universal energy.

We must remark in this a second datum of the cosmic character. The will-to-power implies a will-to-impotence. This ingrained feature of the human organism must be transcribed into the cosmic life as well. There is an energy circumpressing both within and without. Upon this the cosmic life draws at all times and places of its eventual life. The drawing-in process is not necessary, but optional. Merely to be, to stand forth, is in itself an unconscious symptom of health and character. For the universal life, like the human in its morbid moods, may genuinely prefer dissolution to further organization, death to life. The world-organism is thus an achievement. The tirelessness, persistency, and continuity of its being are symptomatic of a certain sanity, a congenital, temperamental healthy-mindedness in the living soul of things.

There are cases, individual and racial, of apparently incurable insanity: the inlets of the universal life with its unconscious sanity seem hopelessly dammed up. Such evil is radical. Its cure, I imagine, can only be effected, if by any means, by a painful, conscious operation within the universal life itself. Certainly in its case the unconscious remedial agency of the cosmic life has miserably failed. But in any event the existence here and there of diseased parts in the world-organism does not argue that the whole is incompetent or likely to degenerate into the amorphous energy—the cosmic infancy it set out from. The evidence weighs heavily on the side of the general *sanity* of the cosmic life.

A third datum of the cosmic character, therefore, is its animal efficiency and unconscious sanity. It achieves being, it draws upon the universal energy by a natural instinct-to-be.

III

In these prime data, however, the cosmic character is subconscious and subpersonal. So far, the cosmic life is strictly animal: it grows instinctively in the virgin womb of being. The human life is suckled, fortified and sanified within this cosmic animal.[3]

[3] One feels secure and willing to function naturally within cosmos's great organism. But I wonder if our cosmic emotion at this level is not really comparable with the gratitude we might feel toward a great animal that has instinctively saved our own skin and bones from the grave?

This, too, is religion of a certain type and its proper emotions are in a profound degree theophanic. Meanwhile it is arch-pessimism—a religion based upon the experience of personal life as a disease of consciousness to be remedied by anesthesis and analgesis, a return to the subconscious organism of which personal feeling-will is but an inflamed member. Cosmic character, so the argument goes, is only weakened and diseased by these germs of personality.

The writer agrees that a *person* is an inflammation of cosmic being. But this disease of personality is a condition in which alone such terms as "purpose," "value," "worth," "morality," gain genuine meaning. Religious pessimism has always aimed at so-called *unconscious* purpose, *instinctive* worth, *animal* morality. But really these are all contradictions in terms. They would reduce ends to unconscious, instinctive, animal functions, whereas the quintessential meaning of an end requires that it be consciously felt, aimed at, controlled; in a word, that it prepossess and be consciously acknowledged by some person. I grant that this condition is hard. Each fulfillment wherein a conscious purpose becomes a part of the organism's unconscious character is but the progenitor of another newly-felt purpose; and so on endlessly. But this constitutes *conscious* as distinguished from *unconscious* character. In personality there is an indispensable, endless challenge to unfulfilled being, a "standing forth" which, on the one hand, will not permit the human life to sink back into the unconscious bliss of animal activity it has risen above, and which, on the other hand, can never raise that human life to a haven of supraconscious rest. Fichte found this inner *anstoss* a challenge for all time. Carlyle leapt under it as under a cosmic lash. Poor Nietzsche lost his sanity under the pressure of its ceaseless will-to-power.

At all events, the cosmic life has in *us* taken on a conspicuous personal character. In us its present ends are genuinely felt. In us its ends are unthinkable, endless, as the pessimists are everlastingly reminding us; but they are none-the-less conscious imperatives. We may risk disease, lose the sanity of our pure reason in gaining the sanity of our practical, but if we turn back we are as salt which has lost its savor: we lose the very flavor and essence of character. In us, then, the blind character of the cosmic impulses has become endlessly conscious. Henceforth we must *aim* at being, we must control our ends even to the point where the abysmal possibilities of being blind us with a new kind of blindness; the blindness of one whose pupils strain to take in the invisible.

"But this is positivism, pure and simple," some one will say. "This is human character, very good while it lasts! but it makes out no such case for the *universal* life. It means merely that a cer-

tain animal has evolved into conscious self-possession. Man, so far, *sports* above his cosmic progenitor. Like positivism, your cosmic humanism is really an *ungodding* (*Entgöttung*) of the universal life, a surreptitious deification of human being. Is God, then, merely a 'crowd-consciousness'?"

To all this cosmic humanism must reply imperturbably: God, if not *merely* human, is at any rate *essentially* just that. Our humanism has practically all its active interests in common with scientific positivism.[4] In its description of the universal life there is no taint of magic religion nor of overleapng metaphysics. The world-ground as the incomparably fecund matrix of the present cosmos is in our view identical with the ether-strains of experimental physics. Cosmos is a system of countless straining relations, a complex of *Energie-strömen.* Psychophysically the cosmic character appears, so far, as an organism of vital activities risen to the level of animal subconsciousness. In us this cosmic animal has varied to the high level of personal consciousness.

But then, the "eternal" of rationalism is an unnecessary hypothesis, if only *human* character be allowed *cosmic* application and sweep. If conscious aiming is now and practically universal in the cosmic life, to say that it has been eternally so adds nothing significant to the present facts and life of the world-soul. The fact is that the hypothesis of an eternal, infinite character unconsciously seeks to remedy the one glaring defect in positivism; namely, its inveterate thinking of man *apart* from cosmos. But the human organism is continuous with the unthinkably limpid stuff of which the universal life itself is a function. In a most important and literal sense the character of any part of the world-life is in its degree the character of the whole. The universal energy which all life draws upon is practically a perfect, limpid fluid. If I tap my desk here with my pen the world-ground is moved gelatinously throughout its whole being. Now, I permit in my person impulses of conscious purpose; these aims are like my pen-taps of a moment ago; whenever they hit the truth in the bull's-eye, they ring their reality into the whole cosmic life; and this by physical necessity, if you please. The cosmic life in us and through us has become in all its physical energies a personal animal. Should it turn back from the endless Person it now aims to become, should it seek to reduce or prevent the inflammation which in us brings it to conscious possession of all its own latent energies, it would surely degenerate into the blind, witless being it once was.

An infinite appetite for personal being is thus a third datum of the cosmic character.

[4] I mean "scientific" as distinguished from the more passionate but shallower ethical positivism.

IV

Once we entertain the notion that the cosmic life is moved through and through by the birth of men within its being there remains only the task of ascribing to the cosmic character the ineradicable forms and passions of the human organism. For the religion of humanism will turn out to be in the highest degree anthropomorphic and anthropopathic in its experience of the divine life.

As to the anthropomorphic character of the cosmic life. The cosmic physique obviously is free from the parts and organs we commonly remark in the frames of animals; it has no *systems,* circulatory, skeletal, urinogenital, and the like. It has not the blue eyes and fair hair of its Thracian idolator, nor the flat nose of the Ethiopian. It is as it were "all eye," "all ear," and "all thought." If it be physical at all, it would seem to have the quality of sensuous experience without the visible end-organs thereof.

Is, then, the cosmic life completely amorphous? This we can hardly say; for there is in fact a cosmic physique—planets, stars, earths, comets, all more or less harmoniously adjusted by this time into a systematic whole. Our thought of the cosmic life may thus in one point be psycho*physical,* and anthropo*morphic.* It is of course a figure to speak of the universal life as "all eye" and "all ear." Regarding its *gross* anatomy, one would be nearer the literal truth in thinking of the cosmic physique as *all brain.* The stellar universe, once more in its *gross* anatomy, is not unlike the cellular structure of a human cerebrum.[5] Of all our animal psychophysical functions it is the cerebral which the cosmic life most nearly duplicates.

It would seem that we can dispense with every other form of physique save the nervous. Let idealism operate to remove that, and the remaining reality is in the last degree unreal and impractical. Thus the cosmic life, like the human, may be conceived as indefinitely changing the form of its neural physique, constantly refining its centers and perhaps generating new (astral) nervous systems *ad libitum.* But the neural *gist* must persist if the life, human or cosmic, is to be real and practical in its impulses and ideas.

Cosmic humanism is thus anthropomorphic in its religious intention. In its essential terms it gratifies men's ingrained passion for human form in the divine life; *i. e.,* by establishing in the place of the overturned God of hands and feet a real community of cerebral experience between man and the universal life. The physique of the cosmic life touches the physique of man in his most sensitive organ,

[5] If a cerebrum were magnified to be proportionate with the stellar universe, I imagine the individual neurons would present a spectacle not unlike that of the stars and planets of the elliptoid universe.

the brain. Physical functioning of the highest order (ideal coordinations, associations, intracortical strains, and the like) is the same in both. The fourth datum of the cosmic life is thus brain-character.

If now we determine what this cerebral function is when void of all the more external organic sensations and functions of the human frame, we shall have some sense of the anthropopathic character of the cosmic life.

V

The elements left in our conscious processes after the elision of all sensory and organic qualities we are permitted to transcribe into the psychophysical life of the world-soul. We exclude at once all the base constituents of our human experience, all organic and sensory processes. The cosmic brain exposes no lobes; nor is it attached sympathetically to the "systems" which enliven our human frames. What, then, *is* this pure, cerebral experience?

1. There is in our human system a certain grossness of psychophysical experience. But we aim always to submit our muscle and joint strains, visceral sensations and all that, to the control of our higher, cerebral energies. Now, we may suppose that this subordination of lower under higher centers is furthered and affirmed by the cosmic life, for the excellent reason that in the universal life the lower centers are not *central* and indeed do not exist: all *its* energies are physically, practically ideal. I dare say, the exquisite energizing of the human organism when the cerebral function is uppermost is due to the fact that its energy is then directly in the stream of the cosmic life's cerebral energy. The human brain duplicates in its measure the physical harmonies of the celestial spheres.

2. Now, if the cosmic life is cerebral, it has more in common with the human than either mystic ecstasy or pessimistic coma has yet dreamed of in their philosophies of escape from phenomenal being. There is a dash of insanity in each of these extremes: mania in the one instance and melancholia with terminal coma in the other. The cosmic character, above all, must be well balanced; it must not blink the facts of its experience in an unbroken, maniacal ecstasy, nor must it wear itself out in the currents of being till it seeks relief in the unconscious silence in which its articulate purposes are set.

Just here, I think, we uncover the supreme datum of the cosmic character—its conscious sanity. The cosmic life on its conscious side may well be assaulted by world-weariness. It is indeed in the highest degree probable that the energy-strains of the universal life should become fearfully fatiguing. In such an event the planets would continue on their unbroken course just as our neurons remain in their proper places even while wearing themselves out toward weariness and unconsciousness. Cosmic health and sanity is an

achievement, as we have already remarked. To balance its world-soul between these extremes of endless, senseless ecstasy, on the one hand and endless, vegetative subconsciousness, on the other, I conceive to be the supreme achievement of the cosmic character.

These, then, are the congenital feelings in the cosmic life: strain and haul, now ecstatic and again depressant, but with a practical intelligence that maintains the cosmic sanity.

3. The emotions in particular which characterize this balancing process are in the human case the feelings of *patience* and *hopefulness*. These melioristic feelings lie just between the extremes of world-pain and world-joy. In their pure form they are, we may suppose, non-sensuous, intracortical. Meanwhile, or perhaps just because they are cerebral, they are emotions which simply reek with character. They alone, I fancy, are the emotions which on *second* thought our anthropopathic religion would be willing to transcribe into the cosmic character. On *first* thought we select unbroken *joy* as the pathetic datum of the divine life. But such a gift, as we have seen, cheapens and indeed cancels all the other virtues of conscious life. Accepting it one's life becomes at once supraconscious and impractical. The desideratum of conscious, practical life would be to face eternity hopefully and patiently. And now this enduring patience and hopefulness are literal data of the cosmic character. They are congenital and ineradicable in the well-balanced mind. Sanity is indeed just *practical intelligence*, buoyancy, rebounding energy—in a word patience and hopefulness, the ability to await patiently the returning of life's energies and buoyant confidence in life's outcome. Our postulate of the cosmic sanity involves these emotions as its necessary data.

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COMMON SENSE AND ATTITUDES

IN a recent article in this JOURNAL on "Ineffable Philosophies," Dr. Henry M. Sheffer, with a truly Chestertonian sense for the paradoxical, writes as follows: "To maintain that the last word of philosophy must not be a proposition, but an attitude, a conviction, is to maintain that there can be no last word." And any such philosophies, in which the "last word" is an attitude or conviction, are promptly condemned as being essentially unphilosophical. To do this, of course, presupposes very decided views as to what is and is not philosophy. I agree quite thoroughly with Dr. Sheffer in his conclusion that an element of the inarticulate and

ineffable lurks within all systems of idealism. But in the following paper, leaving unbiased the question as to what is or is not the proper method for philosophy, I have tried to carry out, in a purely critical spirit, the distinction between the "ineffable" and "effable" habits of thought, and have endeavored to show that this distinction is a fundamental one, which may be detected in other departments of human culture, as well as in the history of philosophy.

There are some things which no one doubts. We never dispute about the location of the streets, and if we want the fire to keep overnight we bank it up accordingly. Here we are fairly well agreed, and this I shall call the region of common sense. In this region lie the things that are the same for all. Plutarch, speaking of the first appearance of authentic history, says, "Beyond this there is nothing but prodigies and fictions, the only inhabitants are the poets and inventors of fables; there is no credit, or certainty any further." The thither-land situated on the other side of the region of common sense might be characterized in a similar manner. Beyond the democratic realm in which all men are equal and unanimity reigns supreme, there lies another region in which law and order are lacking and where parity of opinion is not. This I shall call the region of attitudes.

At a certain level of experience all men inhabit about the same world, and no idiosyncrasies are tolerated. This element of commonalty makes cooperation in the ordinary affairs of life possible. Aside, however, from the world which is common to all, every one branches off on a line of experience that is more or less private and unsharable. The essence of this kind of experience is well suggested in Whitman's lines:

> Logic and sermons never convince,
> *The damp of the night drives deeper into my soul.*

People indulge in this esoteric side of life to different degrees. Some have little to do with it, and refuse to venture far from the world of common sense. Others cultivate it more extensively, and such persons develop attitudes. This individual attitude, once attained, is the point of departure from which any artistic, religious, or philosophical enterprise or system emanates, and the standard according to which any such affair, proposed by others, is judged and valued.

I

A proposition in mechanics is good on any occasion and will meet with a uniform reception the world over, while your (?) favorite passage from Walt Whitman may do a variety of things. It may fall completely flat, or bring on a storm of protest. An artist has an

attitude of his own. This is the ineffable something about his work which defies description, and constitutes the charm for those who understand. Happen not to sympathize with this attitude, either by entertaining a different one or by remaining at the level of common sense, and what he is saying will be gibberish and jargon; but fall in with his attitude, and his work is yours by right of pre-established harmony. What is said doesn't count so much as what lies inarticulate under the words. All that your soul has been conserving in its deepest recesses, what was divined but never formulated, has found a socius and something like expression.

This way of viewing art as expression of personality is, of course, only a part of the story. In poetry, for instance, there is to be reckoned with the sonant effect of rhyme, words and rhythm, the decorative element. But in every case, perhaps, the aim to produce something which merely sounds well or looks well is interwoven with a more fundamental motive which impels the artist to indicate his meaning and reveal it to others.

Nothing defeats itself like words, and the last word of expression is that it can not be expressed. When expression has reached a certain magnitude it fades into the ineffable, and casting aside logic and common sense the poet lapses into paradox.

> Heard melodies are sweet, but those unheard are sweeter.

Here in this twilight region where fancy merges into the fantastic, and thought hesitates between sense and nonsense, belong such utterances as, say, Goethe's:

> Was ich besitze, seh' ich wie im Weiten;

and Ibsen's lines:

> What we win is ours never,
> What we lose we gain forever;

and innumerable statements, such as:

> Cold morns are fringed with fire.

However, articulate expression is the artist's business, and to state in plain language that "words fail me" is highly unsatisfactory.

It is, indeed, the "literary" rather than the decorative element of art which involves an attitude. The side of art which has a more direct physiological basis may be depended upon to produce its results pretty much beyond peradventure. Even here, however, the difference between human beings in regard to sensorial equipment is such as to make judgments on these matters fall short of universality. Nor does the element in literature which merely conveys information involve anything attitudinal. It is only when there is a significance to be accepted or rejected, a meaning to be appreciated, that the attitude comes into play.

There are enough facts extant somewhere in the universe, I suppose, to contradict every effect a poet ever produced. Taken all in all, the manifold of fact as the world presents it is a rather indifferent affair. From the dead level of common-sense fact enthusiasm is unjustifiable, and nothing is worth the trouble of mentioning. The poet, however, dispels at a stroke the irrelevant, and out of the chaos spins an effect centering around his personal attitude. He says, *I* celebrate *this*. And you assent, and join in the chorus,—or not. The artist transcends the level of common sense, otherwise he would have nothing worth expressing.

The method of art is the method of life. The question which art asks is, How does it seem to you? That at last is the method we live by and are glad, the frame of mind in which we walk down the street and look into the faces. "Persons are love's world." Not only love's world, but the world of art, and of religion and philosophy, is persons. With science, however, it is different, for the world of science is essentially impersonal.

There is in this vicinity a line of cleavage which divides the whole of mankind into two more or less distinct classes. The same sunset clouds that thrill the poet with subtle meanings and suggestions serve as data for the meteorologist; but by a strange irony of fate these two aspects of the world do not, as a rule, dwell in the same tenement of clay. That part of mankind in whose lives persons and meanings are central have as possibilities art, religion, and philosophy. Those, however, who inhabit a world in which the emphasis is placed on things have open to them, in the main, whatever does not transcend the realm of common sense.

II

The classic warfare which science and religion carry on is a phase of the universal conflict between people who are accustomed to dwelling on opposite sides of the boundary which separates the region of common sense from that of attitudes. Of course, not all church members are actual combatants in the warfare against science. The majority of people neither develop radical attitudes nor clarify their minds on the implications of their life in the world of common sense. But once these two tendencies become pronounced, they are so incompatible that their respective devotees can only regard each other as having no reason for existence whatsoever.

At a low grade of culture man has the notion of cause and effect, but the conception of necessity, of nature as a rigid and ironclad system, is a much rarer possession, and historically a later acquisition. From this conception exact science takes its departure. The French astronomer Laplace, in his famous essay on probabilities,

speaks of a calculator, a hypothetical intelligence, which being properly equipped with formulæ and data should be able to prognosticate the movement of every atom in the universe for all time to come. With the accomplishment of this, science would have solved the riddle of the universe to its own satisfaction. Science means the increasing extension of the province of matter and necessity, and the banishment, as Huxley said, "of what we call spirit and spontaneity." Never to have been overdrawn by the reign of law is to miss the main current of modern thinking.

The importance of science in showing man what in detail the world is, and in giving him a plan for dealing with the things of nature to his own advantage, can scarcely be over-rated. This same knowledge, however, which furnishes the means of living, brings us no enlightenment about the end and goal of life. Concerning such matters, the purpose and meaning of life and the world, men have always been inclined to wonder and speculate; and while science has nothing positive to offer in this direction, it does in general lead to a view of the world which militates against and contradicts that demanded by the "higher" nature of man.

Science and religion in fact are not so much opposed as disparate. They do, indeed, in the case of the individual, tend to crowd each other out; but the real historical opposition is not between two hostile entities, science and religion, but between two groups of minds in which these tendencies have become exclusively embodied.

Hostilities between these two classes of minds are opened when the religionist, intrenched behind an attitude, sets up statements concerning matters of fact. Religion itself is a frame of mind rather than a body of propositions, yet all religions tend to ossify into theology, and thus collide with science. But in the world of time and space the scientist is on his own ground, and the religionist is routed from one statement after another. Then the scientist grows arrogant, solves the riddle of the universe in terms of matter, motion and force, and dismisses the whole religious *Weltanschauung* as illegitimate.

Science postulates necessity in its world, and with that postulate religion has no concern. Where religion is, statements as to particulars are in abeyance, and to be informed that this or that is *impossible* sounds strangely impertinent. Science is suspended. The feeling, indeed, that somehow every day is a miracle might, even to the scientist, be perfectly unobjectionable. It is too diffused and indefinite to challenge contradiction. But once the postulate of necessity is suspended, all discussion concerning matters of fact ceases indeed to be edifying. Whenever there is a *deus ex machina* waiting behind the scenes to be introduced as the exigencies of the

case may dictate, facts are subject to change without notice and inference is stultified. Science is in possession of the facts; while religion guards the rear of "spirit and spontaneity."

III

The conflict which we have been tracing is twofold; not only do the common-sense people oppose the attitudinal spirits,—and this is by far the more fundamental phase of the conflict; but the latter also wage war among themselves. Common sense is one; while attitudes, personalities, ideals of what life and the world ought to be, are many and diverse. In no department of the human mind is this twofold conflict better illustrated than in philosophy. The kind of philosophy which results from giving prominence to the common-sense tendency, which may be classed rather inadequately as "materialistic realism," is, in its main features, pretty much the same whether we find it in Democritus, Epicurus, Lucretius, Gassendi, Hobbes, or Spencer; while the other sort of philosophy,—that growing out of radical attitudes,—which may be classed as "idealistic," and which suggests such names as Plato, Plotinus, Eckhart, Malebranche, Fichte, Hegel, etc., presents numberless varieties *in suo genere,* and countless possibilities.

What distinguishes philosophers of the Herbert Spencer type is, indeed, not so much an attitude as a refusal to deal in that sort of thing. They are objective, impersonal, and scientific; and regard any other way of philosophizing as yielding merely subjective impressions and vagaries of the imagination. We do not feel that there is back of them any unsounded or inarticulate depths; their distinctive feature is simply a habit of mind which excludes, so far as it can, anything savoring of the personal or spiritual. And were they completely successful in this they would cease to be philosophical at all. No philosophy reports facts merely as they come; for the philosopher, like the artist, composes his world; he emphasizes this aspect and subordinates that, in order thus to attain some sort of a unified world-view,—and this act of emphasis and selection is essentially personal. Although, for instance, Spencer's system may seem as if "knocked together out of hemlock boards," it is none the less true that it was Spencer himself who chose to build with boards rather than something else.

The character of any philosophy is determined by two factors,—attitude and technique, or insight and method. With one class of philosophers, as we have seen, the attitude consists in denying all attitudes,; the insight is just that there is no *in*sight. With the majority of philosophers, however, insights have played a large and conspicuous part. This matter of insight is the *pou sto,* the starting-

point which determines the general direction that the philosophy is going to take; while the technique, on the other hand, lies in the linking of the various steps of reflection, in accordance, for the most part, with the so given direction. Technique, method, logical apparatus, is powerless of itself to produce a philosophy; there must be something to give direction, emphasis, selection, impulse, and life.

The conflicts and disputes in the history of philosophy are largely concerning the insights involved; and the peculiar futility of discussion in this region is notorious. A man's attitude takes form, if at all, through a lifelong process, and to reconstruct it suddenly is quite out of the question. The fact that an attitude cannot be taught has been made the basis of many libels against pedagogy, setting forth that wisdom anyhow is incommunicable. Regarding differences of attitude as final, when such matters are in question, we either praise or damn at first sight, and like Emerson can not spend the day in explanation.

In making their ascent into the region of attitudes men carry different amounts of common-sense ballast. Those more heavily freighted appear as utilitarians in ethics, or classicists in art, or materialistic realists in metaphysics. Among those who slip the moorings more completely are the intuitionalists who petition for a "few fancy virtues," the romanticists who long for fantastic thrills, and the idealists who have been known to conclude that being and not-being are the same.

Once fairly launched on the metaphysical sea, for the particular drift which a man's speculations will assume the character of his private attitude is in the main responsible. Says Vernon Lee: "Such an ineffable central mystery exists in the thought of many philosophers; . . . a whirlpool explaining everything, but never itself explained; called as the case may be, 'Higher Law,' 'Truth,' 'Good,' sometimes merely 'Nature,' and, in the remoter Past, most frequently called by the name of 'God.'" There is in the philosopher's mind "something round which his system has grown, but which is far more essential and vital to him than his system: something continually alluded to, constantly immanent, round which he perpetually hovers, into which he frequently plunges: . . . but which remains undefined, a vague It." Imagine the vast *comédie philosophique* which has been enacted upon this planet!—each participant drawing to defend to the death his *philosophia ultima*, when, after all has been said and done, what he took to be final was very largely a matter of taste. The spectacle of men fighting for their attitudes, each in the firm belief that his is the final and inevitable one, is most likely a huge comedy when viewed from the

heights of Olympus; but the fight, let us say, is good,—and as we are assured by Zarathustra "der gute Krieg ist es, der jede Sache heiligt."

In its historical development philosophy resembles art more than science. The sophomore who takes "Philosophy 4" soon learns just what Descartes said and Hume opined; while the student of physics may have heard of Newton, or perhaps not,—Newton himself being a perfectly negligible quantity. A system of philosophy is a personal product, and when the man who made it is through, the system is finished and closed forever, like a poem. Each philosopher starts anew and cuts his system out of the whole cloth of his own life-experience. In this region there is nothing to correspond with the continuous accretive accumulation of science. The scientist takes the work of his predecessors, and after assigning to oblivion whatever is unverifiable, he adds his own contribution to the residue. In the process the personality of the workers is eliminated and dropped by the wayside.

Philosophy has a great show of logic, yet fancy Hegel and Herbert Spencer trying to convince each other: Hegel the devotee to Heraclitus the Obscure, and Spencer the civil engineer. The difference between their philosophies was rooted in the deeper difference of the two lives. The man who habitually centers on facts, things and dimensions will make a realist in metaphysics. On the other hand, the man who views the world as persons and meanings will find his way into the idealistic camp. These two chronic methods of envisaging the world underlie the respective philosophical positions at a point farther down than their logic begins.

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CAUSALITY

FACTS seem to have distanced the growth of our categories. Nowhere is this more evident than in the case of causation. It is not too much to maintain that naturalism demands a reinterpretation and deepening of this category that will enable it to account adequately for the development and presence of organic forms and social institutions in the same universe with nebulæ and dark stars. Can a formula for causation be found comprehensive enough to cover these varied conditions? This is undoubtedly one of the crucial questions of contemporary metaphysics. Its solution should give tremendous impetus to the advance of a more plastic naturalism.

Some time ago I sought to indicate a solution of the time problem

with much the same judgment of the situation in mind.[1] I wish now to set forth in outline a view of causality which is in harmony with the position there presented. Since the conception to be developed in the present article has been reached inductively in large measure, and hence as independently as possible of the other field, the fact that the two categories, time and causality, interpenetrate and harmonize in so luminous a way serves as a mutual confirmation. One conspicuous divergence from the usual treatment will be found in the connection of causality with the spatial character of reality. Time and space will be lifted from their separateness and be shown to involve one another. *Causality will, in brief, be proven to mediate space and time in a process view of reality.* The endeavor to establish the intimate union of these three categories will, at any rate, be suggestive.

Causation may be regarded as empirical or as ontological. This distinction corresponds to that between time as a construction within the individual's experience and time as change in the reality-process, and it has its roots in the relation of the individual's experiencing to the world-process of which he is a part.

As is well known, the cause was for a long time identified with the "ground" or sufficient reason. Hume it was who brought into general recognition its temporal and empirical, as against its rationalistic character. Of late years there has been on the part of the absolute idealists a strong tendency to swing back to the earlier position. This is an outgrowth of their aversion to time. As I have defended the reality of time as change, it is evident that I must regard as erroneous the identification of the cause with the reason or the explanation. Exact definition and discrimination must be called in to aid in the avoidance of ambiguity, since the word cause is sometimes used with the signification of reason, *i. e.*, the "why" in the Aristotelian sense.

Strictly speaking, a cause is never repeated. Cosmic history, like human history, is unique. Venn, among others, has well shown this unrepeatable character of a cause when taken in the strict scientific sense, that is, in its complete particularity, and has deduced therefrom its hypothetical character with reference to succeeding events. This is evidently in line with the identification of time with change.

The similarity of causal processes, which forms the basis for generalization and for the practical application of past experience to the present, is dependent on existential repetition, *i. e.*, on the simultaneity or spatial side of reality. Like substances under like conditions give like results. The chemist who has a small quantity of a hard-

[1] This JOURNAL, Vol. V., Nos. 20 and 22.

won substance realizes this acutely. If he uses all in one experiment he can not repeat until he secures his factors again. There are two kinds of uniformities, the temporal and the spatial; and only the first has received adequate emphasis in theory.

Another distinction must be made to prevent confusion. The term cause must be differentiated not only from that of ground, but also from what may be designated the "occasion" or force of detent. A lighted match is the occasion for the explosion of a flask of powder, but is not the cause in the strict scientific sense. As a result of this distinction, the quantitative equivalence of cause and effect as interpreted in terms of energy need not be denied. "Nothing occurs without equivalent transformation of one or more forms of energy into other forms." This is really only the assertion of the principle of the conservation of energy and concerns the temporal aspect of causality. Energy is predominantly a temporal category.

Finally, we must not fail to recollect the arbitrary character of what is selected as *the* cause by popular thought in any causal process. Such selection is the function of some interest. For metaphysics we must hold clearly in mind the fact of a continuous process of change in some system and must not be led into mental quagmires by the inadequacies and confusions of popular terminology.

When time is identified with change the problem of the continuity of cause and effect no longer exists. Causality is immanent. If we so desire, we may call the state of equilibrium the effect. A change in any causal system thrown into the form of time as a construction within the individual's experience with its distinctions of past, present, and future, gives the temporal expression of causality found in both Hume and Kant. With the preceding cautions duly noted, no difficulty need be found in empirical causation which good logic will not solve. Let us, then, regard the uses of the terms cause and effect as a methodological question and concern ourselves with causality.

Upon studying causality more closely by means of the analysis of concrete cases of change, we become aware that past theory was not empirical enough. The examination of the "when," "in what manner," and "for how long," characteristics which differentiate unique causal processes, did not receive adequate recognition. As Ostwald sees, the structure of the interacting factors determines the time variable, *i. e.*, the rate of change, and the end result. Manifold illustration of this fact could be given. The interdependence of structure and function in the organic realm would furnish numerous instances alone. Organization must then be acknowledged as essential to the nature of any causal process.

Now, if organization is a factor in the causal process at present,

it must always have been a factor, or the nature of causality must have abruptly changed at some remote time in the past. There is no reason to assume the discontinuity of a passage from the homogeneous to the heterogenous. Such terms are essentially relative. But the complexity of organization may well have increased in parts of reality. Not only is there no *a priori* reason against such a proposition, but science in its evolutionary outlook is everywhere in its favor. It must be understood, however, that I am not advocating a linear evolution for the universe as a whole. When the universe is regarded as stereometrical and time is identified with change within such a process, what holds for one or more subsystems need not apply to all subsystems at once. Organization is, then, a variant in the universe, but an effective variant which determines immanently its own change.

For some centuries we have been asked to choose between two juxtaposed forms of causality, mechanism and teleology. This has seemed to me a harsh and unreal disjunction resulting from clumsy thinking which did not approach, or even seek to approach, the subtlety of nature. Organization enables us to surmount this antithesis just as in the consideration of time it was shown to mediate between flux and permanence. *The result is the doctrine of grades of causal relation and activity dependent on the organization of the interacting parts of a causal system.* With this view granted, the qualitative at last receives recognition, and the real presence of variety, which evolution demands, is faced. What other agent to account for *directed change* seems thinkable except organization? It has at least three obvious merits: First, that of accounting for the conservation of past activity; secondly, that of furnishing a pivot for development; thirdly, the merit of control. Only when these three aspects are understood in their interrelation can evolution be grasped. A very good example of this method of advance mediated by organization can be taken from psychology. Habits are the precipitate of activity, they furnish the means for the development of new habits and they also control the kind of habits to be formed, at least in part—why only in part is another story which involves the spatial side.

The best approach to the spatial side of causality can be made by a study of what I should call causal systems. An example may be given in lieu of a detailed description. An organism and its environment would together compose a causal system. These systems may be of all grades of complexity and may involve one another in the most intricate fashion. Such a system may be dichotomized and the interaction between the parts so obtained will be seen to be selective or controlled by the "form" of the parts. In lower grades

of causality a dichotomy can not be made with the same ease, or need not even be sought if individualization of some part of the system has not proceeded far enough. Let us take for analysis the reaction of an amœba to a stimulus. Suppose the reaction to be positive. We have immediately a system in process of transformation. No matter what the result, experiment can prove neither loss nor gain of energy. But when we look at this system spatially, we find that the two main objects in interaction, the stimulus and the amœba, play different rôles. The selection appears on the side of the amœba and not on that of the object stimulating the amœba. Selection involves this spatial or simultaneity aspect, not the temporal aspect of the transformation within the system as a whole. Moreover, it must be noted that by spatial I do not mean merely a cross-section view, but a stereometrical view, *i. e.*, the massing of co-existent factors as organized and in relation to one another.

I stated in a previous article that time would be understood completely only after causality had been conquered. The reason for this statement is now apparent. Change has its *Innigkeit* in causality and *directed change* is comprehended only when it is seen that causality controls itself by organization. Quite obviously, it seems to me, our analysis has proven that causality mediates space and time. This is the first time to my knowledge that the intimacy of these categories has been grasped.

The relation between the "occasion" or force of detent and the doctrine of grades of causal activity deserves mention. Selectiveness in man's conquest of nature and in his employment of machines consists largely in his ability to control the occasion. He becomes a factor in a larger system, but his function is to disturb the compensation in definite subsystems. Man thus chooses the "when," the "where," and the "manner." In all this selective activity there is no violation of energetics or of conservation; yet, because of his selectiveness and his employment of machines, man changes the face of nature. The concerted action of numbers of men socially organized carries us to a height of selectiveness which physics is unable to conceive, but which is nevertheless real, for in such activity we are every-day participators. Since we have decided to hold unswervingly to continuity and to naturalism these facts must also be reckoned with.

I will close with a statement of what still remains to be explicated. First, causal systems are only relatively self-determining. The degree of their self-determination depends usually on the grade of their organization. This problem can be worked out only by the sciences. It can be seen that *the principle of continuity needs reinterpretation in the light of this new view of causality.* It will

lead, I think, to a mediation of monism and pluralism. Secondly, man dominates the causal systems into which he enters. This is the meaning of his relative freedom or autonomy. This fact also has bearing on the principle of continuity. Thirdly, grades of causal activity may be simultaneous in a system. A man falls like a stone, but if he sees a rope near he will grasp it, which it is needless to say the stone will not do. Fourthly, the idea of the quantitative and the qualitative requires entire overhauling.

It is evident that I am seeking to attain a stereoscopic view of reality. Of the ideal I have little doubt; my success must be left to the readers for judgment.

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REVIEWS AND ABSTRACTS OF LITERATURE

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It is difficult, if not impossible, for a philosopher to admire a paper whose results are repugnant to him, or to appreciate the weaknesses of one that accords with his sympathies; nevertheless, I shall try in this notice to distinguish good and bad reasoning from welcome and unwelcome theory. Thus Mr. Haldane's paper, "The Methods of Modern Logic and the Conception of Infinity," welcome as must be his repetition of the argument against the "bad" infinite, yet considered as a criticism of the modern logic of infinity seems to me to be an *ignoratio elenchi.* The important question is, how far is the genuine infinite consistent with the definitions of infinity given by pure or exact logic? Professor Taylor, at least, in his criticism of Royce's discussion of infinity, has set a better example than this one, for, though his results are not to me as agreeable as Mr. Haldane's, yet he does take up the infinite of logic and mathematics.

Mr. Latta's paper on "Purpose" seems to me to suffer from lack of a well-defined method. There are at least three possible ways of investigating the meaning of a concept. One may start with a definition (taken from the dictionary, perhaps) and develop, by *a priori* implication, all that can be deduced from that definition. This would be the natural method in mathematics; it may be called the deductive method. Or one may seek a definition inductively, by marking out a certain circle of facts as the denotation of the concept he investigates, and by trying to discover the essential attributes of those facts as the material of the definition. This is the method of the inductive sciences. Or, finally, one may seek the ways in which the term is used by men, and try to patch up one consistent definition out of them all. This means the consulting of dictionaries, text-books, and men. It may be called the linguistic method; it does not directly enlarge our knowledge, but settles questions of termin-

ology. Now each of these is doubtless good in its way, but they should neither be confused nor indiscriminately combined, and Mr. Latta's investigation, I think, does this. For the most part it is the linguistic method. Thus he begins with the definition of Baldwin's Dictionary (p. 17) and modifies it (p. 18) to accord with popular usage, comparing it with the definitions of Taylor and Schiller. Cases are considered, however (pp. 22 and 24), though rather incidentally. Also the popular attribution of purpose to organic beings is used as an argument (p. 25). For the rest, excepting some metaphysical presuppositions, we cordially admire the paper. Certainly a careful examination of this concept is greatly needed, though we could wish a more clear-cut definition than "systematic relation" (p. 27), or "systematic unity" (p. 30).

One of the best papers seems to me that by Mr. G. E. Moore on "Professor James's Pragmatism." He criticizes three points: (1) truth coincides with verification and utility, (2) truth is mutable, and (3) "to an unascertainable extent our truths are man-made products." As to the first point, Mr. Moore finds many truths which are not verified, *e. g.*, that at a certain game a player with a bad memory held a certain card, yet *could* not recollect it—no evidence being possible to anybody (p. 37). This we think is unfair to James, who might (and we think would) hold that if one *called* the idea of his holding that card true, one would *mean* that it was there as terminus of a possible complete investigation. Mr. Moore's realism is evidently conflicting here with the pragmatic idealism. Equally unfair is the criticism of the utility of truth. "Men do sometimes dwell on their faults and blemishes, when it is not useful for them to do so" (p. 44). James, of course, means utility in the following sense: the idea is useful in that when one is in *the environment denoted by the idea,* he is by entertaining the idea enabled better to adapt himself to that environment. And James speaks of the "long run" because, in the long run, one is sooner or later likely to be brought into the environment in question. When a man dwells on his (real) faults without advantage from the dwelling, there is no question of the relation of idea to fact, and no question of truth raised at all, in this connection. These misunderstandings of James are comparable only to the perennial misunderstanding of idealism by realists. However, it does seem that James might have defined the meaning of "utility" a bit more fully, so as explicitly to exclude the misconception about useful lies (p. 47). Mr. Moore candidly enough, indeed, says (p. 49), "I certainly hope he would say that these statements, to which I have objected, are silly," and "if he and other pragmatists would admit even as much as this, I think a good deal would be gained." Since James, for one, has insisted on it already, we do not see what would be gained by repetition. Doubtless, indeed, James spoke carelessly in saying that a belief is true "so long as to believe it is profitable to our lives" (quoted on p. 53).

His second criticism seems to me more just. There are truths that are not mutable. Any idea of a present fact is in a sense eternally true (p. 69). If James means to assert that *some facts change* or that *some sentences are true when they are uttered and later or earlier false,* this is

obvious but trivial (p. 70). "It seems to me impossible that he could speak as he does, if he meant *nothing more* than these two things." "Does he hold that the idea that Julius Cæsar was murdered in the Senate House, though true now, may, at some future time, cease to be true, if it should be more profitable to the lives of future generations to believe that he died in his bed?" . . . "If he does hold that truths like this are *not* mutable, he never tries to tell us to what kind of truths he would limit mutability, nor how they differ from such as this" (p. 70). I am not aware that James has anywhere met this demand for the limits of mutability; the criticism seems to me, therefore, to rest on a perfectly fair interpretation.

The third criticism, of the "man-made" character of truths, is, I think, equally sound. Is this really only a theory of how this or that man came to have this or that belief (p. 71), or only the statement that we entertain our beliefs and thus allow them to exist as mental facts, and so "make" them in a sense (p. 72)? If so, it is obviously true and trivial. But "we should never say that we had made a belief true merely because we had made the belief" (p. 73). Undoubtedly James has been ambiguous on this point, and it is probably these hints of mutability and man-made-ness that have given rise to the misconceptions of his doctrines of utility and verifiability. Mr. Moore has, I think, neatly laid his finger on two sore spots, and one would like to see a definite reply to these two accusations, from James or some other "pragmatist."

Dr. Caldecott's paper, "The Religious Sentiment: an Inductive Inquiry," is small in scope, but clear and logically arranged. It is an empirical study of religious experiences taken from "a small group of thirty-four autobiographies of Wesley's early Methodist Preachers" (p. 78). "These young men . . . were not of ill-balanced nervous systems" (p. 78). "The elementary fear of suffering, the dread of the torments of punishment, is referred to less frequently than might be supposed" (p. 80). Relief from "the misery of self-reproach" is sought at any cost. This seems to be a "central constituent emotion" (p. 82) which "proceeds to draw together the other emotions, and to establish a control over them" (p. 83). Thus, the social sentiments were strong and thoroughly organized, and "in the field which interested them their thinking was vigorous, in some cases notably so" (p. 85), while, on the other hand, "to the attractions of the Fine Arts they were insensible, for the most part" (p. 84). As an essential factor in their religious sentiment "we see a joy unequaled, so far as they can testify, by any other which they knew" (p. 90). Altogether the writer comes to a rather optimistic conclusion, comforting to those who love religion: "that the sentiment included an inner factor which touched the very center of the mental nature; that this central emotion had succeeded in acquiring control over the emotions: . . . and in completely organizing them; and that it was by these means associated with the attainment of an intellectual 'fixed idea,' and with the principal activities of the mind" (p. 93). How can we tell whether the author has proved his point? So much depends on selective emphasis, that one can not be sure, except with great fullness of detail in the evi-

dence. We must know the greater part, if not all, of what is contained in the documents used, in order to judge whether the author has laid his emphases in the right places.

Dr. Hodgson's paper on "The Idea of Totality" opens with ten pages of introduction, which insists on making fundamental and thoroughgoing the distinction of *known* and *existent;* and in accordance with that distinction separating the *concept* of totality from the *percept.* The concept "implies completeness, limitation, and finitude" (p. 105). But there may *be* perpetual data beyond any whole we can conceive: time and space, "as given, are given as exceeding the percepts in which they are co-elements, that is, as given elements which we find, in thinking of them, to be in contrast with the completeness of purely logical concepts, and name, in consequence of that contrast, incomplete, unlimited, and infinite" (pp. 106–7). A realistic metaphysic is partly outlined in the rest of the paper; the paper is, in fact, a short essay in metaphysic, of which the title gives but a faint idea. As such it can scarcely be fittingly discussed in this connection. But I must make one objection: namely, to the definition of "strict idealism" implied in the phrase "its denial that anything which is not-consciousness can be real" (p. 112). Is there any idealist to-day who would be willing to have strict idealism thus characterized? I doubt it.

"Impressions and Ideas: The Problem of Idealism," by H. W. Carr, contains a beautiful illustration of the distinction with which we began this notice, between logically sound reasoning and welcome doctrine. Idealism to Mr. Carr is unwelcome doctrine, though logically sound and irrefutable. "The premises of idealism are undesirable. . . . Idealism pressed to its conclusion involves solipsism" (p. 124), which is incredible and absurd, while yet "I have never met with an attempt to refute solipsism by a direct logical answer" (p. 126). Again: "even a philosopher only gives an intellectual assent [to idealism]; in practical life he thinks as other men" (p. 130). Mr. Carr, therefore, can not logically accept realism and is forced to a sceptical position. Temperamentally this paper is to me delightful, because it reveals so clearly the humor of the issue between idealism and realism. The former is irrefutable, the latter is (apparently) believed by both schools. The humor is none the less, that the situation is much the same as when Berkeley wrote. Mr. Carr is to be congratulated on a frank, clear, and unusually honest statement of the arguments.

Mr. Nunn's paper "On the Concept of Epistemological Levels," is an essay in genetic psychology. The analytical unit of development is conative process (p. 143): mental development consists in increasing richness of content and in systematizing various processes into wholes. So far there is nothing new; but now we read that "the 'stream of consciousness' of the modern psychologist is, strictly speaking, not . . . even one of the data which he must accept and deal with" (p. 148). As an hypothesis "it has become a hindrance rather than an aid to progress" (p. 149). We should postulate instead "the realistic doctrine which takes as ultimate data a psychic monad opposed to a universe of independent objects"

(p. 149). This genetic postulate, comparable in some ways with Professor Baldwin's dualistic standpoint, is interesting as a reaction upon those monistic views (Schiller, Dewey, James and others) of "experience" as the matrix of all distinctions. All this, however, is but getting ready to work: as actual fruit of study we are offered the doctrine of "three characteristic moments in the development of the conative systems which we call the sciences" (p. 156). The first is initiated by intuition of the striking, the beautiful, and the novel (p. 155) (really pre-scientific), the second is knowledge "aiming at practical control over nature" (p. 155), and the third, "the disinterested 'passion' which aims at . . . the theoretical sway of some system of ideas over the province of primary facts which it claims to rule" (p. 156). At all these levels, knowledge has the same general phases, yet in each level is adapted to that stage. This last is no doubt a useful suggestion—though it has been already fully worked out by Baldwin in "Thoughts and Things." "The admission that the precise form and value of the deductive phase must vary with the epistemological level under consideration would, I believe, resolve many apparent contradictions between the views of eminent logicians upon such methods as definition and the syllogism" (p. 158). This insistence on the growth of logical categories is no doubt good, but it must not be strained into the dogma (quite without proof) that the laws of logic are "*merely* [italics mine] the terminal forms of what is essentially a developmental process" (p. 159). Origin and validity, though interdependent, are not identical aspects. Otherwise, Mr. Nunn's paper seems to me a very useful rough survey of the growth of thinking.

Perhaps the best paper is that of G. Dawes Hicks, on "The Relation of Subject and Object from the Point of View of Psychological Development." We have space for but a few points: the paper is as a whole indispensable to the student of cognition. Mr. Hicks first condemns the psychology of cognition apart from philosophy; partly, I think, because he includes under psychology certain problems that many logicians might consider philosophical problems, and partly (must I say?) from lack of psychology. Thus he says, "Considered as mere events . . . states of perceiving, imagining, thinking, desiring, would exhibit no marks by which we could distinguish them" (p. 168). I had thought that perceiving differed from imagining and desiring, for one thing, in the presence of a unique process called belief; again that imagining contains but little, if any, of the feelings of strain which mark the presence of desire, etc. As to "thinking," so vague a term should not be used in such an illustration. Mr. Hicks's main problem is the question: Is the subject-object relation original or derived? And the answer is, for all intents and purposes, "derived," *i. e.*, neither consciousness nor attention is rightly conceived as an inner eye, the objects of which are presentations furnished to the mind" (p. 181). There is, indeed, some relation primitively present, but not this one of subject-object. All we can say is, that consciousness "is from the first an apprehending activity, and is not rightly described in terms of mere 'feeling'" (p. 188). I do not quite see what "apprehending activity" can mean here, as distinguished from feeling, unless it

includes a real (though not at the time known) distinction of subject and object. Mr. Hicks goes on to derive the relation from the "mass of corporeal feeling which . . . may be wholly, and certainly is largely, absent when a content identical in kind is ideally represented in imagination" (pp. 190–1). He has argued this point in a preceding paper (*Proc. Arist. Soc.*, I., p. 200) and it is too large a question to be discussed here. Mr. Hicks is here forced to defend a presentative theory of memory: "The so-called 'memory-image' is, then, just as little as the percept a construction made up of psychical material: it is not something that serves as a substitute for the real object" (p. 193). I agree that "too much stress has . . . in this connection, been laid upon "intersubjective intercourse" (p. 195) and "certainly the primitive subject can have no intuitive apprehension of other minds" (pp. 195–6). The author must here put in the customary defense of realism, as the doctrine of a real world existing before we become aware of it (p. 201). As if the idealist denied this! His misapprehension of idealism is shown here: "So far from consciousness starting with an awareness of subjective states and advancing thence to an awareness of what it takes to be objective, there would seem to be stronger grounds psychologically for exactly the opposite contention" (p. 201). He admits, however (pp. 202–3), that this may be unfair to idealism, though he still accuses it of somehow violating common sense. Returning to the subject, we find that on looking back to primitive cognition "we seem to arrive at length at an elementary condition of consciousness in which there would be but obscure and confused awareness of sense-qualities, barely and imperfectly discriminated, and not apprehended as belonging either to an independent world of fact or to the modes of the subject's inner life" (pp. 203–4). There is, however, no generic distinction between such simple apprehension and apprehension mediated by thought (p. 207). "The theory according to which objects apprehended are either wholly or in part mental constructs is devoid of logical justification" (p. 213). Whether or not we like Mr. Hicks's results, we must admit that his treatment is thorough and suggestive.

The symposium on the "Nature of Mental Activity" seems to me not what the author's known abilities would lead us to expect: a rather desultory affair, devoted to much mutual criticism. Professor Alexander distinguishes between mental activity in a wider and a narrower sense, and defends rather obscurely a relational view of consciousness (p. 221 ff.). Dr. Ward criticizes this and Bradley's view, while Professor Read defends idealism—a refreshing change—while Dr. Stout agrees largely with Ward's criticisms.

As a whole the volume maintains the high standard set by the past numbers.

W. H. Sheldon.
Princeton University.

The "Perceptive Problem" in the Æsthetic Appreciation of Single Colours. Edward Bullough. *British Journal of Psychology,* October, 1908, pp. 406–463.

The esthetic judgments and the introspective accounts of thirty-five subjects (32 men and 3 women) upon a series of colored papers are

recorded by the author. There were, in all, thirty-five colors exposed one at a time in a dark room under controlled illumination. The subjects were instructed to give "single judgments," not "preference judgments"; for, the author says: "The method of comparison has been taken over wholesale from purely psychological experiments, where it served special purposes, into esthetic experiments, where it destroys the pre-adaptation of the subject to esthetic experiences, and thereby vitiates his whole mental attitude towards the objects to be offered to his appreciation. It is precisely characteristic of the esthetic appreciation to be non-comparative, individualizing, isolating, and, in a sense, absolute." He tends, therefore, to discredit the results (those of Cohn, for example) which have been obtained by methods involving comparison.

In his analysis of the records Bullough distinguishes four main "aspects" of color. These are: (1) the *objective* aspect, (2) the *physiological,* (3) the *associative,* and (4) the *character* aspect. The objective and the physiological aspects are at first discussed together, and the various qualities which, under these heads, are ascribed to colors are classified and treated under the sub-heads (1) purity, (2) stimulating or soothing power, (3) temperature, (4) strength, (5) purity in the sense of saturation, (6) weight, (7) brightness. Qualities like purity, brightness, and strength are attributed to the color itself and are, hence, "objective"; whereas qualities like warmth, coolness, oppressiveness, seem indicative of an effect upon the organism of the observer, and are called "physiological." The associative aspect emphasizes the suggestive value of colors. The most complex and important feature of color is, the author considers, the character aspect. He says, "By 'character' or 'temperament' of a color I mean the appearance in a color or the expression by a color of what, in the case of a human being, would be called his character, or mood, or temperament; the manifestation of a special, more or less definitely developed personality. . . . The surprising subtlety of distinctions existing between the temperaments of but slightly different colors and the many-sided richness of these characters is such as to cast occasionally some doubt on the genuineness of this aspect in the mind of persons who themselves are insensible to it. Many are, in fact, inclined to consider it as a kind of mystic nonsense, as imaginative romancing or poetic fancy, or as 'reading things into a color.' The criticism is as valuable as that of a deaf person on a musical composition." This character aspect seems at first to be a special case of the associative aspect, but we read: "In the case of associative features—except in those of the most objective type—even the subjects themselves have the latent feeling that it is they, and only they, who impart its meaning to the color. Compared to this exclusively subjective significance of color, the character-aspect exhibits a surprising quasi-objectivity. . . . the temperaments attributed to colors by various and perfectly independent observers agree fundamentally to an astonishing degree, in spite of various most interesting divergences in minor points of richness and elaboration."

The following account of blue and red illustrates the type of description which individual colors receive: "The character of a red or of a

tone tinged with red is usually of a sympathetic, affectionate kind; it appears to come out to you with openness and frankness, while blues are of more reserved, distant, even unaccessible temperament, somewhat like individuals described as 'difficult to know.' This temperament is not by any means repellent; on the contrary, it has an attraction of its own, by the promise of more thoughtfulness and greater depth than red in its expansiveness seems to offer. A similar opposition is to be noticed also in other respects: red is by far the most active color; blue, on the other hand, tends to contemplation and reflexion. Red exhibits degrees of energy which are sometimes almost overwhelming; it was once not inaptly described to me as 'gushing,' whereas in blue there is always some measure of coldness and distant state, which to some persons gives it an almost haughty appearance. While red is impressive by reason of its irresistible strength and power, blue has something monumental in its dignified repose and its peculiar spaciousness."

Corresponding to the four aspects of color the author distinguishes four "perceptive types" among his subjects; of these the physiological and the associative types are most numerous.

KATE GORDON.

WINNEBAGO, WIS.

JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. March, 1909. *The Problem of Beauty* (pp. 121–146): HUGO MÜNSTERBERG. – The beautiful is not beautiful because it is agreeable; it depends not upon my individual taste, but upon a suprapersonal will to have a harmoniously self-assertng world. The objective satisfaction resulting from the will to have such a perfect self-agreeing world is the only esthetic attitude. Experience presents three spheres: a world of outer objects, a world of other subjects, a world of inner personality. To these correspond, respectively, the visible arts, the literary arts, and music. *The Idealism of Edward Caird* (pp. 147–163): JOHN WATSON. – A sketch of Caird's career, and a characterization of his philosophy. Caird was much influenced by Carlyle, later by Goethe, and, subsequently, most by Green. Caird found in Hegel a principle of reconciliation not before appreciated. *Proceedings of the American Philosophical Association The Eighth Annual Meeting, Johns Hopkins University, December 29–31, 1908* (pp. 164–190): Abstracts of papers by SCHMIDT, ROUSMANIERE, HAYES, STEELE, EWER, ALBEE, CREIGHTON, MARVIN, SHELDON, DOAN, MONTAGUE, MOORE, HUME, HUSIK, SINGER, COHEN, MECKLIN, FRANKLIN; discussion of realism and idealism by DEWEY, WOODBRIDGE, BAKEWELL, SMITH. *Reviews of Books:* Hugo Münsterberg, *Philosophie der Werte:* A. E. TAYLOR. G. S. Fullerton and others, *Essays in Honor of William James:* H. A. OVERSTREET. W. Dilthey and others, *Systematische Philosophie:* J. A. LEIGHTON. John Dewey and J. H. Tufts, *Ethics:* W. CALDWELL. *Notices of New Books. Summaries of Articles. Notes.*

Claparède, Ed. *Psychologie de l'Enfant et Pédagogie expérimentale.* Genève: Librairie Kündig. 1909. Pp. viii + 282.

Fifty Years of Darwinism: Modern Aspects of Evolution. Centennial Addresses in honor of Charles Darwin. New York: Henry Holt & Co. 1909. Pp. 274. $2.00.

Münsterberg, Hugo. *The Eternal Values.* Boston and New York: Houghton Mifflin Co. The Riverside Press: Cambridge. 1909. Pp. xv + 436. $2.50.

Stewart, J. A. *Plato's Doctrine of Ideas.* Oxford: at the Clarendon Press. 1909. Pp. 206.

NOTES AND NEWS

THE Philosophical Society of Berlin is completing arrangements for the dedication this coming year of a monument to Fichte. This event will crown the centenary of the opening of the University of Berlin, and will celebrate the achievement of Fichte, who was the first Rector of the University and, in great measure, its founder. Professor Gabriel Campbell, of Dartmouth, is the representative in this country of the Philosophical Society of Berlin. Associated with him are Professor Hugo Münsterberg, of Harvard; President G. Stanley Hall, of Clark University; and W. T. Harris, of Washington, ex-Commissioner of Education. These representatives of the Society are receiving and forwarding contributions for the Fichte monument.

IN the review of Miss Shinn's book entitled "The Development of the Senses in the First Three Years of Childhood," which appeared in this JOURNAL (Vol. VI., No. 9), the reviewer noted that the book was not furnished with a table of contents. In justice to the author and to the reviewer, announcement should be made that the table of contents was accidentally omitted by the printers in the first 200 copies of the book.

MR. WALTER B. PITKIN, formerly assistant in philosophy in Columbia University, and during the past two years connected with the editorial staffs of the New York *Tribune* and the New York *Evening Post,* has been appointed lecturer in philosophy in Columbia University for the year 1909–1910, in place of Professor G. S. Fullerton, who will be absent on leave.

DR. BOYD H. BODE, assistant professor in philosophy in the University of Wisconsin, has been appointed professor in philosophy in the University of Illinois.

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THE JOURNAL OF PHILOSOPHY
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AN INTERPRETATION OF THE ST. LOUIS PHILOSOPHICAL MOVEMENT

WHAT were the elements in Kant and Hegel which made them appeal to a group of western Americans in the middle decade of the nineteenth century? Why did a number of men of ability in this country find a sort of gospel in Hegel at a time when his philosophy was discredited and neglected in the land of its birth? Why did their propaganda have so considerable a measure of success, and why were these enthusiastic students of idealistic philosophy themselves so successful in practical affairs? To answer these questions is to give a psychological interpretation of the remarkable philosophical movement in St. Louis which began in 1859, when the systematic study of Hegel was taken up by Henry C. Brockmeyer, Wm. T. Harris, and a few others, and which may be said to have ended in 1893, when the *Journal of Speculative Philosophy* ceased to be published.

Investigations, as a rule, turn out to be more difficult than they at first appear, and for this reason I entered upon this with some reluctance. But for once I have been pleasantly disappointed. For the answer to these questions lies almost on the surface, and continued investigation only confirms the first impression. In the first place, why is it that any philosophical or religious movement succeeds? To this the psychologist can give a definite answer. The reason is that the philosophy or religion in question satisfies yearnings, cravings, and profound needs. It is true, as Spinoza says, that the good is that which satisfies desire, that we do not want it because it is good, but that we call it good because we want it. Behind these felt needs the psychologist does not go, and possibly this is as far as anyone can go. These cravings may be a sort of ultimate vital reaction to be accepted as data. And certainly when they have been shown to be the source and support of any religious, philosophical, or social movement, the requirements of a psychological interpretation of that movement have been met. This principle obviously applies in the case of Christianity. Thus, Harnack, dealing with

this very question, says that one of the causes of the success of this religion was "the irruption of the Syrian and Persian religions into the empire, dating especially from the reign of Antoninus Pius. These had certain traits in common with Christianity, and although the spread of the church was at first handicapped by them, any such loss was amply made up for by the new *religious cravings* which they stirred within the minds of men—*cravings* which could not finally be satisfied apart from Christianity." He also speaks of "*the craving for some form of revelation*" and "*the yearning for redemption*" as being at that time widespread and general. Why men then had these religious longings is another question, but that they did have them and that Christianity best satisfied them is certainly one of the chief reasons why this religion triumphed over its competitors.

Turn now to Volume I., Number 1, of the *Journal of Speculative Philosophy,* and you will find on the first page the leading motive of the St. Louis philosophical movement clearly stated by its leader. "There is no need," he says, "to speak of the immense religious movements now going on in this country and in England. The tendency to break with the traditional, and to accept only what bears for the soul its own justification, is widely active, and can end only in the demand that Reason shall find and establish a philosophical basis for all those great ideas which are taught as religious dogmas. Thus it is that side by side with the naturalism of such men as Renan, a school of mystics is beginning to spring up who prefer to ignore utterly all historical wrappages, and cleave only to the speculative kernel itself. The vortex between the traditional faith and the intellectual conviction can not be closed by renouncing the latter, but only by deepening it to speculative insight." That is, neither mysticism nor naturalism satisfies. While we can not accept tradition unmodified, our instinct for history will not allow us to break with it altogether, and the need is felt of something more than Emersonian insight into spiritual laws. On the other hand, while Comte, Mill, and Spencer are valuable allies in intellectual emancipation, their positivism does not satisfy, and indeed seems to negate persistent and deep-seated demands of human nature.

The philosopher's passionate longing for truth is only one of the many desires of our complex nature, and it is, therefore, not at all strange that men whose soul-life has been nourished on Christian conceptions should seek for an interpretation which would make it possible for them, without losing their intellectual integrity, both to accept the facts of science and to maintain their hold on a spiritual movement in which they feel there is a treasure of immeasurable value. The problem is thus stated by Harris in the second volume of

the *Journal:* "This absolute truth, embodied in such a form as to be *lived and felt* as religion, should also be *thought* as pure truth." The craving for science is strong, and the perception that it is indispensable is clear, but men who yearn to believe in God, freedom, and immortality inevitably seek to escape the philosophy of naturalism which science is often supposed to involve. Indeed, even those who feel no interest in saving Christian doctrines, and who can not be accused of seeking in Hegelianism an excuse for continuing to believe what they know, or strongly suspect, to be untrue, are oppressed by the conception that our lives are parts of a rigid order and unimportant incidents in a great natural process. There is a deep craving in most men for some view according to which our life can be regarded as something more than "a mere item in a natural world," more than a bubble poured by the eternal Sake, for some world-view in which humanity shall appear significant. Any philosophy which even promises this, which seems to offer a way of escape from the view that man is a mere phenomenon, is sure to be welcomed as a gospel. This is one of the reasons why a number of citizens of St. Louis were looking to Kant and Hegel for help a third of a century ago, *i. e.*, at a time when Herbert Spencer was the philosopher most read by the American people. Whether satisfaction was really to be found where the St. Louis students of German thought looked for it is an entirely different question. In such cases it is enough to offer a plausible promise to satisfy. I merely remark here that it seems significant that in America, as in Germany, those who begin with Kantian views tend to make the transition to the Hegelian. For while it is interesting at first to be told that mind is the condition of space and time and that it gives laws to nature, in the end such ideas are likely to seem more or less fantastic, and dissatisfaction inevitably arises with the view that our thoughts merely play about over the surface of things without ever reaching the truth. In the Hegelian scheme, we at least seem to be delivered from a narrow, subjective human world, and to have a significant place as phases of a great developmental scheme in which something is being achieved, in which even that which is "annulled" is taken up and preserved, and in which the individual shares the life of the universe. The individual feels that so far as his thoughts are true, they are not his merely; and even his aspirations, if they are in the direction of the world-process, are not an individual peculiarity. The world-life is thus conceived to be living, thinking, working, aspiring in the personal human life. Hegel was welcomed because he enabled men to think nobly of themselves, and to satisfy the age-long and well-nigh universal craving for a conception of human life

as significant because united and cooperating with and sharing the life of reality.

This is not, however, the whole story. There was something more in Hegel for the St. Louis philosophers than the apparent satisfaction of religious needs. While some minds are content with empirical methods, others seem to have a constitutional yearning toward the deductive ideal. Of the latter, Plato is the great prototype. His philosophy is a quest for a supreme principle, for the idea of the good, from which, if it could only be discovered, he conceived that all science might be deduced. Brockmeyer and Harris, especially, of the St. Louis group, were minds of this temper. It is interesting in this connection to note the former's statement that it was a suggestion of Plato's that determined him to the study of philosophy. "The more I thought of it," he says, "the more it seemed to be the only thing to follow. It was the path of pure thought. While I was at Brown I searched for some philosopher among the moderns who carried this out. Happening upon Hedge's 'German Prose Writers,' I was directed to Hegel, and found that his 'Unabridged Logic' was the greatest modern effort in the direction of pure thought. The world since the classic days has made its chief progress in the conquest of material nature. And why? Simply because mankind has been furnished by the Greeks and Arabs with a perfect instrument—mathematics, the basis of mechanics and of all the physical sciences. By means of this perfect instrument all the advances have been made. And they have been so rapid because it is so perfect. What professor of mathematics has to justify his science before his scholars? But how is it with the higher modes of human activity? We are little if anything ahead of the Greeks, simply because the instrument for the transmission of pure thought —logic—made practically no progress towards perfection from the days of Aristotle to those of Hegel. And though Hegel has by no means done all, he has accomplished more than anyone else."

The deductive ideal cherished by these men is even more clearly stated by Harris. Introduced to Hegel's philosophy by Brockmeyer, this vigorous mind immediately realized that it had found its affinity. And although, like all the great thinker's disciples, he differs in particulars from his master, he is one with him on essential points. In his critical exposition of Hegel's Logic, he says that he struggled for a long time with the question "How to convey to a neophyte an idea of the province of such a system of pure thought—how, in short, to demonstrate the necessary existence of pure thought and show its significance in solving all problems. Such pure thought, could one demonstrate its existence as an element in all concrete problems, would furnish the formulæ for the solution of all questions. . . .

This process, with the pure forms of experience—that is to say, with the categories underlying experience—gives us a sort of organon, or logic of ontology, containing in general formulæ all the solutions to be found in experience. Just as in the case of mathematics, the analytical solution given in the algebraic formulæ is a general one and furnishes the pure form for all concrete or applied solutions; so the pure-thought solution, according to this logic, develops what is essential in all solutions of particular cases; for these particular cases are only applications of the pure-thought elements to limited spheres of conditions. Once master of the general solution, one can solve the practical questions that fall under it."

This general or pure-thought solution of the problems of life the leaders of the St. Louis movement thought they had found in the Hegelian dialectic, and they proceeded at once to the application. In this line of their activity, Broekmeyer seems to have been the leader. Harris speaks admiringly of him in this wise: "He impressed us with the practicality of philosophy, inasmuch as he could flash into the questions of the day, or even into the questions of the moment, the highest insight of philosophy and solve their problems. Even the hunting of wild turkeys or squirrels was the occasion for the use of philosophy. Philosophy came to mean with us, therefore, the most practical of all species of knowledge. We used it to solve all problems connected with school-teaching and school-management. We studied the dialectic of polities and political parties and understood how measures and men might be combined by its light." "Fantastic!" do you say? Perhaps not so fantastic as it seems. For these men were successful in their several lines, in political, business and professional life. Governor Broekmeyer rendered great service to his state, while Dr. Harris attained a distinguished place in the educational world, becoming United States Commissioner of Education, known and honored both at home and abroad. Other members of this group became men of distinction, among whom may be mentioned Thomas Davidson, Denton J. Snider, George H. Howison, and F. Louis Soldan.

But it may be said that these men were successful not because of, but in spite of, their philosophy. I am of the opinion, however, that in some cases these men were not entirely mistaken in attributing their success in part to the employment of Hegelian concepts. When the matter is well considered, this opinion will be found far less strange than it may at first seem. For what is a concept but a mental instrument? And even at the fearful risk of being suspected of holding pragmatist views of the nature of truth, I further ask, how are the fruitfulness and value of a concept to be tested except by its results, by the way it works? Take, for instance, the con-

cept of evolution: in scientific study it has proved not only valuable, but indispensable. John Fiske said of it: "Whether planets or mountains or mollusks or subjunctive modes or tribal confederacies be the things studied, the scholars who have studied them most fruitfully were those who studied them as phases of development. Their work has directed the current of thought: all other work has died." This concept is, moreover, proving to be one of the strongest psychic factors of civilization making for social stability and orderly progress. It is the antitoxine for revolution. For those who thoroughly understand that social institutions are products of ages of growth, and not of manufacture, realize the futility of schemes for social reconstruction which might otherwise seem plausible and be really dangerous. The idea of evolution is, therefore, a potent factor in social evolution, since it tends both to stability and order, and to the flexibility and modifiability which the conditions of life demand.

The value of such a mental instrument as this is, of course, easily and quickly perceived. Not so, however, with the Hegelian concepts: of these the average American student makes sport—that is, when he considers them at all. Having been brought up in an atmosphere of love for the practical and of contempt for the speculative, and having heard and read caricatures of Hegelianism, he is inclined to despair of all who take this philosophy seriously as of those who have parted company with reality, who have left the road to truth and are lost to all sane thinking forevermore. But it is a curious fact that some who for any reason have been led to study Hegel, although approaching him in this spirit, have found awaiting them a great surprise. Like Molière's delightful fool who was being coached for a social career, and who on learning the distinction between prose and poetry was overjoyed to find that he had been speaking prose without knowing it, the intensely practical American mind is astonished to find that the reviled dialectic of Hegel is simply a quaint statement of the principles which he knows and applies intuitively, and to which in large measure he owes his practical success.

For life is an art, and as such it is more complex than any science. It is never the expression of a single principle, but always fundamentally a conciliation of interests. To live well, successfully, and happily, it is necessary to recognize and do justice to the egoistic and the altruistic tendencies, to the spirit of self-sacrifice and the spirit of self-development. As the human mind is the theater of an immense number of impulses, instincts, desires, and needs which are the raw material of life and which become a personality only when they are organized, when each is given due recognition and assigned its

proper place; so society is an organization of many interests, none of which is without significance. The unsuccessful man often owes his failure to his tendency to take the social oppositions with which he has to deal as absolute rather than as complementary. He is not conciliatory, for he denies all reason to those who differ from him, and so begets irreconcilable antagonisms that defeat his own aims. If a reformer, he is apt to be a fanatic, and regard those who do not fall in with his plans as the incarnation of evil. And he can only see hypocrisy in those who refuse to take a principle and run away with it, but are wise enough to secure for it as extended an application as the circumstances permit.

For such unpractical and futile fanaticism the vision of Hegel is an effective cure. That Hegel had a vision of the truth is explicitly admitted even by Professor James. He speaks of him as "a naïvely observant man," and says that "Merely as a reporter of certain aspects of the actual, Hegel is great and true. . . . There is a dialectic movement in things, if such you please to call it, one that the whole institution of concrete life establishes. Hegel's vision agrees with countless facts. His dialectic picture is a fair account of a good deal of the world. . . . Somehow life does out of its total resources find a way of satisfying opposites at once." Hegel saw that this is a living world, and understood that to see anything truly we must see it in its relations, that all that is finite is provisional, that the objects and institutions by which we set such store are but phases of a process, and that no antagonisms are absolute. Now says James, "Hegel's originality lay in transporting the process from the sphere of percepts to that of concepts."

But herein lay not only his originality, but his service. For entirely aside from the inferences that Hegel drew, aside from his peculiar formulæ, his mistakes and errors of every kind, the great fact remains that Hegelian concepts are very useful instruments in a world in which things are dialectic. All successful leaders and managers of men are in a sense unconscious Hegelians. The art of life consists in knowing how to conciliate interests, in making the compromises which efficiency demands. It is, of course, easy to caricature this philosophy, but it seems clear that a certain amount of it is conducive to moral integrity as well as to practical success. For it legitimates the compromises which success in practical life requires, which we are all compelled to make, but which, when we have no philosophy which gives this legitimation, make us reproach ourselves with inconsistency and each other with hypocrisy. The man who is accustomed to regard adherents of other religions and political parties as representing views which are rather the supplements or

complements of his own than their absolute negation, who knows that the whole truth about a matter can never be stated in a single proposition, may make an honest and efficient fight for the truth that he thinks timely and important, and yet with perfect sincerity recognize that those who are opposed to him are probably not entirely without some right and reason on their side.

These principles were illustrated in the case of the leader of the St. Louis movement in philosophy. It is recorded that when, in 1867, William T. Harris became superintendent of the St. Louis public schools, the wisdom of the appointment was questioned. What could a speculative philosopher, a spinner of theories and a devotee of the unpractical, do in a position which called for practical wisdom and the power of managing men? Yet it was soon clear that no mistake had been made. The dialectician knew how to apply his concepts, and although the school board was composed largely of ward politicians, he was so far able to win and keep their support for his progressive measures that the St. Louis schools were soon recognized as among the best in the country. The St. Louis philosophers also devoted much time to the study of masterpieces of literature and art, and, in their own opinion at least, found Hegelian concepts very helpful in their interpretative efforts. We to-day can not share their enthusiasm. We can but feel that their interpretations consisted too largely in ascribing to the great poets and artists of the past an elaborate philosophical view of which they were wholly innocent. Yet the movement was productive of good to the extent that it led busy westerners to study classics in which they might not otherwise have been interested. Nor can it be maintained that the Hegelian concepts are entirely unfruitful in literary study. For the great writers are like the complex world they portray in that they are not the representatives of a single idea or tendency, their greatness consisting partly in their ability to do justice to the oppositions which we find in experience. The result is that the greater the writer, the more adequately he reflects life, the greater seem his inconsistencies to narrow minds, and the more frequently is he claimed as an authority by contending parties. Thus, the New Testament is regarded by some as a socialistic book, and by others as a classic expression of the gospel of individualism. So it has been also with Plato, Shakespeare, and Goethe.

This episode in the history of our western life can hardly be regarded by men of intellectual interests without a considerable degree of sympathy. One of the simplest facts of observation is that in spite of all that is said of the practical minds of Americans, they can not do without philosophy. And now that many are no

longer satisfied with the traditional religious view of life, they are restless and unsatisfied till they find another. They run here and there, and it is pathetic to see in what pitiful and fantastic theories they sometimes put their trust. Forty years ago men and women in this city seeking guidance for their thoughts and lives turned to the romantic philosophy of Germany. That they did so is greatly to their credit, for, whatever the defects of the thought-systems they looked to for help, they were at least intellectually respectable.

The pity is that this interesting philosophical movement proved so temporary, that it was a mere episode or exception, that the fantastic and unintelligible elements of a philosophy which contains so many fruitful thoughts should have led to wholesale condemnation and general neglect. For in our western civilization we still need the service that Hegel has shown himself able to render. We need to keep clear the distinctions which it is the business of the mind to make, and yet to remember that things that are conceptually distinguished are not thereby separated in fact, and that our classifications have a practical and not a metaphysical validity. In the difficult task of living together and of reconstructing our ideas and institutions, it would lessen the friction and promote cooperation if the eager promoters of special interests could learn the great German philosopher's secret that to overemphasize any aspect of truth is to get into a false position, that other standpoints have their relative justification, that one may be conciliatory and yet sincere, that the absolute tone in us mortals is out of place, and that large-mindedness is as important and necessary in moral and political life as in philosophy.

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HEGEL'S CONCEPTION OF AN INTRODUCTION TO PHILOSOPHY

THESE notes were suggested by the rumor that philosophy is becoming popular. It may soon become the fashion for everybody who is anybody to have his *Weltanschauung*. Popular science, Christian and unchristian, not excluding psychical research, are interesting symptoms. However secluded is the academic hall, its students come from a modern world of just such symptoms.

With the rapid increase of students seeking and needing an introduction to philosophy, is emphasized this question: How shall a man with merely common sense be introduced? The question is pedagogical, but it is more: it is itself a philosophical problem.

That some definitely special introduction is considered necessary is made apparent by the increased attention of teachers to introduction courses, and by the large number of printed introductions appearing within a few years. On my shelf is a score of such texts, expressing widely varying conceptions of what it means to introduce people to philosophy.

It would be fascinating, even if entangling, to consider these conceptions severally, and, especially, together. But, on the shelf with these books, is a worn and cherished volume over a century old, a book until recently out of print, a translation of which from the German nobody has ever taken the trouble to publish, a little book which it took a literary detective months to procure for me, and for which I then paid the hard-earned but cheerfully surrendered sum of seventeen dollars. It is Hegel's introduction to philosophy, intended by him as the introduction to *the* philosophy—his philosophy. I refer to his early writing, the "Phänomenologie des Geistes."

One does not have to pay seventeen dollars for it since the new editions have appeared. The Hegelian revival has been nowhere more fruitful than in the critical study of the neglected *Jugendschriften*. In the light of the revelations of these earlier writings, new and pronounced interest has been awakened in the "Phänomenologie"; and a better understanding of it is immanent.

I propose cursorily to examine this work to discover what, in general, is Hegel's conception of an introduction to philosophy.

First of all, there are certain well defined problems which any adequate introduction to philosophy must meet. To ask of what sort is Hegel's conception, is to ask him how he solves these problems.

An introduction to anything is a transition from something relatively known to something relatively unknown. Arising out of this very definition are three classes of problems: First, What is it that the philosophically uninitiated with whom we have to do may be assumed relatively to know? Second, What is the relatively unknown thing to which we are especially trying to give him the transition? Third, Just what shall be the nature of the transition itself?

Now, that which our philosophically uninitiated may be presumed relatively to know includes at least the current verdicts of the common sense attitudes toward life, together with something of literature, of science, of art, of religion, of history, of human institutions—however little of these, something more of each of these than of technical philosophy. From these things the transition to philosophy must be made: and I insist that it is obvious that any true introduction to philosophy is bound to relate philosophy in a specially solved manner to just these things in order to effect any transition at all. And an

introducer to philosophy must determine just to what he is trying to introduce the student. Is it to a sort of philosophical dictionary? Some seem to think so. Is it to a realization of the problems of philosophy? To their definite solution as well? To typical solutions? There are those who think each of these things. Is it to historic systems? To some special system which the introducer holds? To the power of spontaneous philosophic thinking? To all of these? "Yes" is the answer to each of these queries if you ask the right book.

It is demanding a solution to these three definite classes of problems that I approach Hegel's "Phänomenologie." I hope to indicate that Hegel's conception of an introduction to philosophy (however he may be said to have worked it out) is highly definite, generally commendable, and infinitely suggestive to the teacher who wishes to meet present-day needs.

It were supererogatory here to review the plan and scope of a so well known work as the "Phänomenologie." It is sufficient to remind ourselves that it was undoubtedly inspired by a class of literary creations in vogue at the time. There were current several romances of a sort whose hero is a type rather than a concrete personality. In such romances, stress was laid upon significant processes of development through which the type-hero passes. "Wilhelm Meister" is an excellent instance of this type-fiction. Such works suggested to Hegel the idea of writing a biography, not of this or of that type, but of the type of types, the *Weltgeist:* more definitely, the story of the self as it proceeds on its way through the typical dialectical stages through which ordinary knowledge passes to philosophical insight.

Here, then, first of all, we have a suggestion of an introduction to philosophy intended for every man, which is itself the story of the phases through which, indeed, Everyman passes in achieving philosophy.

And, now, since every man begins with the common sense attitudes, we have here an introduction that proposes to relate itself very vitally to common sense. For instance, in the very first section of the book, a typical common sense attitude toward experience is subtly and accurately depicted under the head, "Die sinnliche Gewissheit." We all recognize the unreflective point of view where one is naïvely certain of the truth, but is not aware of the process by which certainty is won. So one makes the familiar appeal to his immediate experiences as of ultimate and decisive significance. One lays great stress upon "facts," and refers with absolute assurance to the "face-value" of facts.

Now, how does one make the transition from this naïve attitude to the philosophic point of view?

Well, in the first place, Hegel tacitly insists that any attitude of common sense is itself already philosophy of an undeveloped sort. However crude he is, a man's life is the practical expression of a theory. And not only is his life a theory, but his theory is a life. But, just because common sense is both a philosophy and a crude one, and also a life, must it have its own inner law of process or dialectic, which leads it out of itself to a viewpoint more self-sustaining, that is, more philosophical. For instance, "Die sinnliche Gewissheit" soon discovers that this vaunted immediate "fact" in the flux of facts refuses to mean anything just by itself—that "meaning" is some invariant of the flow of experience.

So far then, Hegel's conception of the introduction of common sense to a philosophical viewpoint suggests: First, that for the beginner, philosophy were better viewed not merely as a theory about life, but as an attitude toward life; second, that common sense is a real attitude not alien to philosophy, and so is responsible for maintaining itself—when serious, it does not, as a matter of fact, hesitate to accept this responsibility; third, that thus the transition or introduction to philosophy is to be depicted as an inner development of common sense itself—a development which does not say that common sense was wrong and philosophy right, but which sublates the undeniable truth of common sense in the larger view.

This is not all of Hegel's conception, but before going farther let us ask how effective this much might conceivably be made, from a pedagogical standpoint.

Suppose that he who has thus far attained only the common sense attitude mentioned studies the well-told story of its self-defeat and ultimate triumph in a larger view; would that larger view remain but a pretty fiction on the page? Or, would the reader too have been moved along by the logic of this drama of his own spirit so that he himself would share in the triumph of the larger view? And, finding this new-won view, in turn, meeting its tragedy and relative triumph: and so carried on through the gradual stages which lie between common sense and philosophic insight, would not such a reader, I say, be effectually introduced to philosophy—provided the dramatist of the world-spirit had done his work well? How can one better induce common sense to approach philosophy, and, more, to approach it philosophically, than to depict the way common sense has to approach philosophy as soon as ever it tries to defend itself?

I have taken one definite common sense attitude as an instance: but Hegel does the same for most of the widely prevalent attitudes toward life from which the transition to philosophy must be made.

For instance, how acutely does Hegel depict an episode of the scientific point of view, or "Beobachtende Vernunft," together with its self-defeat if it is taken as self-sufficient! Not through mere observation, but through action shall the self win its world. And so with other partial attitudes of the human spirit.

Thus does Hegel seek, first, to relate philosophy to every so-called unphilosophical stage of thought; and, second, to make the transition from these stages always by an inner dialectic. But, third, to just what, in such a conception, has one been introduced?

First, the reader is introduced to most of the typical philosophies. This is in the nature of the attempt to depict successively the typical attitudes of the individual toward his world. And, further, each possible philosophical attitude is made to realize itself and experiment with itself to the utmost, as, indeed, in the ultimate history of philosophic systems, it actually does. Each philosophy is made intoxicated with assurance. Hegel shall make truth a kind of Bacchantic festival, where each *Gestalt* of truth is drunk with revelry (*Vorrede*). If objection is made that the stages do not really occur in the precise order in which Hegel depicts them, no great point is made: at least, the typical stages are there. Do you seek idealism? Here it is, in about all its conceivable forms, from the naïve practical idealism of the primitive savage to the critical idealism of Kant, and the absolute idealism which shall later develop into the synonym of Hegel. Idealism is not flung at you as a dogmatic tract; it grows up as a life, consciously emerging at all only as the demand of certain realistic assumptions.

Some of our introductions to philosophy seek to introduce us by way of the concrete history of philosophy. Others bring in concrete examples from that history. Hegel does neither. To my own mind, he suggests the true relation of an introduction to the material of historic systems. Throughout the "Phänomenologie," not one philosopher's name is mentioned. The student is not to be diverted from his absorption in the drama of the possible attitudes toward the world by the names of those who happen to have held these attitudes, together with their highly contingent modifications. That belongs to the history of philosophy proper. Yet Hegel, a consummate master of the history of philosophy, has that history in mind all the time. The world-views depicted are those that have historically occurred, but divested of the merely accidental, the chronological, and presented in their logical reality and natural relations. There is the kind of thing at each stage that might occur at any time.

One is here truly getting ready for historic systems; in the only real sense, is being introduced to them. Let me illustrate: impor-

tant aspects of the ethical doctrine of Kant are richly portrayed in the section on the "Moralische Weltanschauung"—but more, made strangely alive and related as a life to other attitudes, not submitted as a mere name, or as a categorical teaching. The essential view of positivists like Pearson and Mach you discover at the eloquent close of the section on "Kraft und Verstand," where it is revealed that what you took for reality "out yonder," for the "nature of things," is really your own construct. Would you have the student anticipate pragmatism? Well, you will find most of the thirteen varieties; and more, motives which underlie them all. For instance, Hegel will make you understand, yea, live to the full, the attitude that truth can not be appreciated by looking at any final system of categories, that truth must be *lived* to be appreciated. You will find even Tolstoi, yes, and Nietzsche, peering out at you from the marvellous pages devoted to the Aufklärung. And so, from first to last, with other typical historic attitudes.

But not only is the student introduced to the typical systems which he shall afterwards find embodied in historic philosophies: he is taught to realize the problems of which these systems are to be regarded as solutions. Each successive view arises, indeed, only as the result of the realization of problems; and, as the solution of such, will itself, in turn, conjure up its own problems for which, again, solution must be sought. Thus, for instance, is realized the problem of the one and the many, which appears through the book on successively higher levels. The student is not told, "Here is a problem," but he discovers that he has helped to create a problem. It develops before his very eyes, and he watches it and partakes in it with the interest and participation with which he watches the growing complications of an attention-compelling play.

It may be that your doctrine is that the sort of philosophy to which the modern youth most needs to be introduced is actual and spontaneous philosophic thinking, not so much to a system as to a philosophic mode of mind. Well, nowhere is Hegel didactic. You achieve these successive world-views yourself, or you understand them not at all. Meanings are successively elicited by your cooperation—not proclaimed.

It may be your doctrine that an introduction should perform the office of a technical philosophical dictionary, that it furnishes the tyro with his tools. I think that Hegel's conception of the use of philosophical terms in a merely introductory treatment is at least suggestively correct. They are nowhere to be used falsely: yet are they nowhere to be used with the forbidding rigidity of the technical system. Hegel himself is, in this regard, more or less sinful. I

should say that in an introduction terminology should grow more definite as problems and solutions become more definite, until, at the end, one is quite ready for an approximate crystallization of meanings.

But the ever persistent query arises: Should an introduction purpose to lead the reader to some final system of the introducer's own? Well, yes: and no. Surely, the introducer must, as a philosopher dealing with the explication of the real meaning and more or less correct interrelations of systems—surely such a philosopher must have ultimate convictions of a quite definite kind: and he must use them. If he does not, his introduction will be unphilosophical, while yet attempting to introduce philosophy. If the objection is that Hegel's introduction is an explicit introduction to his own system, one should be reminded that this is true in a so general sense that it is no fatal objection, nay, even a merit. For, in general, Hegel introduces us to his own system chiefly in the sense that his own system seeks to be an implicit synthesis of all the viewpoints he has set forth. Should not any philosophy seek to do this at least? Is it not true that in some real sense, to be determined by the individual philosopher, "Das Wahre ist das Ganze"? It would seem that the outcome of the "Phänomenologie" is purposely left ambiguous, as the outcome of a mere introduction should be. In conception at least, it would be a good introduction to almost any philosophy.

Nor can one validly object that here is taught a "developmental view of thought." Of course thought behaves that way: it has some "dialectic" or other, or we should never be able to make any progress in our discussions of philosophy. Surely this internal growth into a deeper view is better than an external leap or an external conjunction; if indeed such be even conceivable. Hegel does not teach it so much as he points to it. He merely asks you to watch thought in given situations and see what it does. The "external reflection" aims to be no more than is necessary to direct attention. Remember that the Hegelian dialectic proper, in its rigid meaning, is not exhibited here. The successive stages of the "Phänomenologie" are by no means deduced: they are merely found.

The uninitiated into philosophy is apt to be interested in the great periods of history, and can readily be reached through that interest. Now, most introductions ignore this patent fact entirely. Hegel seizes upon the truth that every great social and political crisis in history means the dramatic unfoldment of a certain definable outlook upon life, whose tragedies and comedies it is well worth depicting. It has philosophic meaning. Hegel paid far more attention to concrete history and its meaning than any other philosopher, an-

cient or modern. Even in his *Jugendschriften* he is interested in two things that Schelling, for instance, cared not for at all: first, political questions, and second, the history and interpretation of Christian institutions. Preeminently, an introduction can gain reality by appealing to the attitudes revealed in the events of one's own time. Hegel is not only a classicist: the political and social phenomena of his own day had great significance for him. In the "Phänomenologie," Hegel is not concerned with constructing a philosophy of history, although this has sometimes been asserted. But he notes that history does picture vividly the dialectical fortunes of many a theory about our world. Hegel's use of history is only illustrative, but as such is wondrously striking and illuminating. For instance, in "Geist," under the fortunes of the social self and its first view, there rapidly passes before us the dialectic drama of the ideal Grecian commonwealth, with its inner conflict between the divine and human laws, pictured in the Antigone: here is imperialism too, with its inner battle of law with caprice, and the resulting estranged spirit of a people: here is the *Aufklärung,* gloriously rising to supposedly final triumph, only to find its tragedy in the unspeakable chaos of The Terror. Here are situations such as that of *Reichtum,* identically recognizable in our own day. Throughout, the unity and interrelations of human institutions is suggested, as well as the failure of man to give abiding expression of his spirit in the social and political worlds. In short, here is an introduction, by way of common facts of history, not only to philosophy, but to the philosophy of history—an inevitable discipline thereof.

Philosophers since Plato have not been greatly encumbered with a literary style, and philosophy proper can very well do without it. But an introduction to philosophy can not. An introduction to philosophy, in the very nature of its task as defined, should be a seduction to philosophy. The "Phänomenologie" exhibits a rare combination of the literary spirit with the treatment of technical problems. Here is revealed a mind of poetic imagination, of dramatic instinct, of pathos, of ridicule, of humor, of satire—and of keenest sarcasm, as in "Das geistige Tierreich." Further, the "Phänomenologie" not only embodies (within regrettable limits) the proper literary spirit, but searches out the philosophical meaning involved in great literary masterpieces—masterpieces in which the man of average culture is already interested for their own sakes. There is a happy tendency of late to connect philosophy and literature in certain introductions. It is conspicuous in Perry's "Approach." But they might be connected with a still more precise and significant method than has yet been attempted.

It would be preposterous to maintain that the "Phänomenologie" as it stands is a good introduction to philosophy for the mind of the freshman. (Even Hegel's imagination could not penetrate to that darkness!) All that I insist upon is that the conception is a good one; that it is realized adequately in no modern introduction to philosophy; and that somebody ought to write an introduction in which some of its main suggestions are materially realized. To-day, some introductions fulfil one aspect of this conception, and some, another. There is certainly a growing inclination to connect philosophy with common sense attitudes. Fullerton's book is an instance. The introductory chapters of some of our more recent histories of philosophy try to do this same thing, and, in a small measure, succeed.

As it stands, the language of the "Phänomenologie" is too forbidding. But this does not affect the conception itself. Nor does Rosencranz's testimony that shortly before his death Hegel started to revise the book and crossed out those passages which referred to the intended second part of his system. I am not at all considering the "Phänomenologie" as an introduction to Hegel's philosophy.

The present introductions to philosophy are experiments: and our use of them is proving little more than experimental. An adequate introduction to philosophy will seriously attempt to take the reader upon a veritable "voyage of discovery." Its creator will try to show the modern and obdurate lover of the concrete that philosophy is the only truly concrete thing there is.

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A CASE OF VISUAL SENSATIONS DURING SLEEP

WHILE the parallel between the state of hypnosis to that of sleep has been often pointed out, it has occurred to me that an account of my own habit of sleeping with open eyes, and thereby having distinct visual sensations during sleep, might afford another illustration of the connection between the two. This illustration is the more striking perhaps as the normal sleeper has no visual sensations, and hence there is one less possibility of his sharing the experience of the hypnotized subject.

It has been my life-long habit to sleep with my eyes half open. I do not know whether the eyes are shut during the night and only open when morning approaches, or whether they are open all during the sleeping state. It has been almost impossible for any one to observe this peculiarity without rousing me; but at any rate, the testimony of those who have had any occasion to observe me sleeping has

been the same. However firmly the lids are drawn over the eyes on going to sleep, they fly back again until half the eye is left uncovered, and the retina is thereby as exposed to stimulation as at any time during the waking life. Of course this unprotected state of the eye makes it only more in the condition of the other end organs of sense. The ear, the skin, and the nose are as open to stimulation in sleep as at any other time, and when the eye is in an analogous situation, accurate visual sensations are often present, and there may result a peculiar, characteristic experience corresponding almost exactly with the accounts which hypnotic patients give of themselves.

The situation with which I am familiar, is as follows: The process of waking is often very gradual, and passes through a characteristic stage. In this period, I am still asleep, with no motor control whatever, but with sensory processes apparently in every way as complete as in the waking state. I see the room with perfect distinctness, although I do not believe that the eyes move. I see the chairs, the books, and the window, and often wonder why it is that all connection with my motor apparatus is lost, and why with my utmost efforts to move and the feeling that I *am* moving, my eyes inform me that I am all the time perfectly quiet. Sometimes I know that I am asleep, and simply wait patiently to wake up. Perhaps nothing is more curious in the whole experience than this waiting, in complete possession of my senses, for a return of motor control. Suddenly I am awake and can move, but I do not see the room a particle more distinctly than I have been seeing it for some time. Sometimes there is no realization of being asleep, in which case the apparent paralysis is disagreeable and even frightful, whereas at other times my dreams go on, enacting themselves in the room, which I am seeing throughout as a distinct visual background. This last is perhaps the most confusing variation of the phenomenon, since the truth and the illusion of the experience are so blended, that I continually assure myself that I can not be dreaming, and the dreams are thereby taken more seriously than at other times when by reason of darkness, vision can have no part in the experience. It often happens that dream persons issue from behind a real door, a dream hand moves along the real wall, and a dream figure sits upon the real bed. Since my vision is so accurate, I can not reassure myself by being certain that I am asleep. Nor am I in a slumber deep enough to accept any dream that comes without comment. My reasoning powers are active at such times, and I commune thus with myself: "No one can have opened the door, for you know you locked it." "But I see a figure distinctly standing at my elbow, and it has knocked on the door twice." "You are probably asleep." "How can I be? I see and

hear as distinctly as I ever do." "Why, then, don't you push the figure away?" "I will. Here I am doing it." "No—you are not doing it at all, for you can see that you have not moved an inch." "Then I am asleep after all—the figure is not there, and I need not be afraid of it." Sometimes this logic is sufficient and the dream vanishes; but at other times it continues, and I must go through the argument afresh, or perhaps sink into a deeper sleep where I do not dream at all.

Sometimes in place of real hallucinations, the dreams are only illusions or misinterpretations of visual sensations. I remember an instance not long ago when I was camping with several friends in a wooden cabin, where our clothes were hung on pegs in the wall at the foot of the beds. My friends and I were lying on four cots facing the wall, and on four pegs hung dresses surmounted by a hat. The sun shone into the room early, and I lay contemplating the wall as I slept. The clothes upon the pegs were transformed into a loose-jointed old lady attempting to hang herself. With perfect distinctness I saw the sun streaming in upon the rough boards and the low roof, and with equal distinctness the old lady was strangled on every nail, lurching from peg to peg along the wall, while I was a horrified, but helpless spectator. In a flash, however, the old lady became a hat and dress, while the rest of the scene remained unchanged. I have tried to determine whether I was in point of fact deceived by these hallucinations, or whether in the background of my consciousness I have known all the time the difference between reality and illusion. Certainly in some cases I have known the difference enough to question the presence of the dream figures; but whether it was because I distinguished between the two types of perception, or only that I questioned the reality of persons who would not ordinarily be in my room, I can not feel certain. At any rate I have not been sure enough to quiet myself emotionally, and the consequent fright or pleasure has been much stronger than I should have felt in a similar situation during waking life.

Another feature of this experience, is that in the weeks that I have been especially investigating this peculiarity, my experimental interest has remained vivid even in sleep, so that on one occasion at least I have been able to make deliberate observations while in this quasi-hypnotic condition. Usually I am too occupied with the drama itself to control any experiments; but a few mornings ago, upon finding myself once more in this state, the first question that arose was, Does the possibility of eye-movement still remain, after the loss of motor control in other parts of the body? It seemed that this avenue of control was still open, for without being able to turn my head, I

moved my eyes around all the objects within the range of vision, with perfect ease. The next question was whether the other senses, especially hearing, remained as acute as vision; but since there was nothing to listen to, I began, as I confidently supposed, to sing and heard my own song distinctly. Suddenly, however, came the indefinable change that told me I was awake. The sound vanished, and I found that I had not been singing. My mouth was so tightly closed that I could not have been doing so. Moreover, I could *hear* that I had not been singing, and should in any case have roused my neighbor in the next room had I been making the noise I supposed I had. Since in this case, I was so deceived about my auditory sensations, it is possible, and I should say highly probable, that I was also deceived about the eye movements, and rather imagined the change in visual sensations than experienced it through any variation in retinal pictures.

The analogies which I observe between this sleeping state and that of hypnosis are the following: It is perfectly possible in sleep with the eyes open to have a hallucination against a background of real visual sensations. The loss of motor control seems the same in this sleeping state as in hypnosis. The wakening comes by persistent auto-suggestion instead of through the suggestion of the hypnotizer. Negative hallucinations are possible in this state, but, so far I have experienced them, only with the sense of pressure, that is, in an absence of any feeling of contact with clothes or pillow. I have been able to detect no negative visual hallucinations. Movement hallucination occurs constantly, as when I feel that I am moving and see that I am not. Often, with it all, is that partial consciousness also reported by hypnotic patients, that these hallucinations are not reality—though this ability to detect the real from the false is by no means always present, even when the perceptions seem most acute. I should say, moreover, that the supposition that nervous stimulation in sleep comes mainly through the ear, is based solely on the fact that with most people the eyes remain closed and the room dark. With open eyes and a light room, vision is in my own case fully as prominent as hearing, and less likely to arouse the sleeper than a noise. I can not detect that vision in sleep is either more or less acute than waking sensations. At the moment of waking the light, colors, and outlines of the surroundings remain identically what they have been. On the other hand, sleeping sensations of sound are intensified so that often upon being roused by the striking of a clock, a regular decrease in intensity is observed until the waking sensations may be very slight. Further than this, I do not observe any of the irrationality of the dream consciousness. The

logical associations are wholly normal, only the sensory and motor processes are disarranged.

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REVIEWS AND ABSTRACTS OF LITERATURE

Social Psychology, an Outline and Source Book. EDWARD ALSWORTH ROSS. New York: The Macmillan Co. 1908. Pp. xvi + 372.

The first interest in taking up a volume entitled "Social Psychology" is to learn what the author understands to be his field. McDougall's book, for example, which appeared nearly simultaneously with that of Professor Ross and bears the same title, has a very different subject-matter. Professor Ross defines his subject as follows: "Social psychology, as the writer conceives it, studies the psychic planes and currents that come into existence among men in consequence of their association. It seeks to understand and account for those uniformities in feeling, belief, or volition—and hence in action—which are due to the interaction of human beings, *i. e.*, to *social* causes." This the author would distinguish from "psychological sociology," the psychology of groups. Apparently, also, he rules out all aspects of the social self except its agreements and uniformities, or the "agitations" into which it is drawn. Any such analysis as that of Adam Smith, Wundt, Baldwin, or Cooley, is apparently excluded. These, to be sure, consider man as in mental contact with his fellows, and as building up conscience, language, customs, and indeed the very structure of the self out of the give and take of the social process, but they do not abstract from all the interests and attitudes which arise from group structure. Professor Ross would conceive individuals as so many discrete units, unaffected by any structural relations. He would fix attention solely upon the processes of transmission of ideas, feelings, and beliefs from one to another, and the consequent modifications in individuals which are due to these transmitted psychoses.

It is presumably because he wishes to conceive social psychology in this special way that he makes the statements in the preface which at first sight certainly surprise the reader. The first sentence of the preface styles the book "the pioneer treatise in any language professing to deal systematically with the subject," and a little further he says: "I have brought social psychology as far as I can unaided." Now Wundt calls his treatise a "*Völkerpsychologie*" rather than a *sociale Psychologie,* but this is on the ground that the term "social" is liable to be taken in its common popular sense, and he understands his field to include those mental processes which are connected with the living together of men in society. Cooley and Sumner do not use the title, but most readers have supposed they contributed something to a knowledge of the individual as affected by social stimuli. Baldwin definitely calls his book

"A Study in Social Psychology." This makes it plausible that in the case of all these—and other authors that might be named—Professor Ross has not found assistance because he does not consider that they have written on social psychology in his understanding of the term. The omission of Tarde's name in this connection is doubtless an oversight, as a warm tribute to it is paid further on, and it is obvious that the standpoint and method is essentially that of the *Lois de l'Imitation.*

To return to the author's treatment, the chief factor to be considered in producing planes and currents is that of suggestion and imitation. After noting the hypnotic types, and the extreme conditions of the crowd, the more important psychic planes are classed as those of (1) the mob mind, characterized by crazes and fads; (2) fashion, in which the inferior asserts his equality with the superior by copying him in externals "while the superiors counter by the effort to differentiate themselves afresh from their inferiors by changing the style"; (3) conventionality, the deliberate, non-competitive, non-rational imitation of contemporaries; (4) custom, the transmission of psychic elements from one generation to another; and (5) rational imitation, in which the "attitude toward a practice depends in no wise on the prestige or discredit of those who have adopted it, or of the time and place of its origin, but only on its apparent fitness," and in which "our attitude toward a proposition depends solely on its appearance of truth, *i. e.,* its probability."

In addition to these phenomena of conformity, or induced currents, there may be conflict when incompatible forms of thought or feeling or action, as they are propagated outward through space or downward through time, encounter and interfere with each other. The conflicts may be between two prestiges, a prestige and a merit, or between two merits, and may be either (1) silent, in which case it is likely to be decided by authority, persecution, example, observation, or trial; or (2) vocal, *i. e.,* discussion. When some sort of collective action is necessary before the conflict has reached a natural termination, such premature decisions involve compromise. Sometimes also progress is secured not by conflict and substitution, but by union and accumulation.

Of these various topics most attention is given to those of conventionality-imitation, and custom-imitation. For "conventionality-imitation is far more radical, essential, and controlling in our lives than mob-mind or fashion." Specimens of deep-seated beliefs which are alleged to be—for most people—of purely conventional acceptance are "that manual labor is degrading," "that pecuniary success is the only success," "that conservatism is good form, whereas radicalism is vulgar," "that things are beautiful in proportion as they are costly," "that the consumption of stimulants or narcotics by women is unwomanly." The laws of conventionality-imitation are essentially those of Tarde. But the examples are drawn in many cases from phases of American life well adapted to appeal to the student's interests.

In the study of custom, also, the most striking feature is not the analysis, but the illustrations. The ardent social reformer frequently gets

his chance for a blow. "Institutions of control—law, government, religion, ceremony, and mores—are fossiliferous." "Among a custom-bound people the problem of exploitive government is simple." If all our law is perfect already it should doubtless be passed down the generations through the hands of old men, as is practically the case in our courts. "If on the other hand, ours is not a static, but a highly dynamic, society, and the rapid and sweeping transformations that occur in the spheres of industry, transportation, business organization, and urban life call for correlated changes in law and administration, then the wisdom of hinging all this adaptive development on the consent of life judges steeped in the older legal philosophy, is open to question."

In form the secondary title calls the work "an outline and source book." It is not a source book in the more usual sense, as the citations are all incorporated in the author's treatment of the several topics. There is, however, a large amount of quotation averaging, perhaps, half of the material. Summaries and exercises are offered for class use. Like all of the author's work it is written in forceful, clear English, with occasional epigrams that drive home the point. Thus "in times, in circles, and in matters, where conventionality-imitation rules, the old tries to appear new." "A brutal selfishness as old as the Ice Age struts about in phrases borrowed from the Darwinists, and bids us see in the prosperity of the wicked the Success of the Adapted!" (pp. 281–282). No student could fail to have his eyes opened to the merely irrational and anti-rational character of much that passes with us as unquestioned, if not unquestionable and sacred, simply because it is general. To my mind the greatest value of the book as a text for class use is in the fact that it directs attention upon these matters.

It may be permissible to record a personal reaction toward the illustrations from law and religion. This was that the material upon custom in religion seemed on the whole to illustrate rather a past epoch, whereas the material upon law and government suggests present issues. No doubt there is plenty of convention and custom in religion, but after all we have had our *Aufklärung* in religion to a far greater extent than we have had it in the field of law. There are signs that present society is going to turn its attention to this latter field. Some apparently seek to claim for forms and agents of law the same super-human sanctity and infallibility which was at one time claimed for the church. It may be as wholesome a thing to apply the same rational discussion and criticism to the legal field.

The primary critical question in relation to the whole book is doubtless that of the author's definition of social psychology. It may, I suppose, be granted that a writer may select any point of view which seems to him to afford opportunity for a fruitful analysis of human life. However, when this is proposed not merely as an individual essay, but as a guiding and limiting conception for a new science, it is pertinent to ask whether the abstraction made for the purpose is justifiable, *i. e.*, whether it makes a wise selection of data and a wise definition of its analysis. In

the present case it is obvious that the descriptive predominates over the causal, and that in many cases our explanation must be cut short in an unsatisfactory fashion. For instance, as one of the laws of imitation it is stated that "the social superior is imitated by the social inferior." But unless we can examine the psychological attitude implied in superiority and inferiority on the one hand, and the psychology of a group on the other, we are limited to a bare recording of the fact, and this in many cases leads to generalizations which are tolerably obvious (*e. g.*, "Mental states differ in ease of propagation," p. 121). Professor Ross does not indeed so limit himself in all cases, but the conception of the science which he proposes would tend in that direction. It is scarcely probable that in our search for explanations of how we think, feel, and act as we do, we shall find it satisfactory to limit our inquiries in this way. We want to understand, for example, the mental processes of family life and the attitude toward the family; or the psychology and morals of the capitalist and trades-unionist. We can not get what we want by considering simply the waves of suggestion and imitation. We must consider the effects of the institutions and the group. Or again, must not an adequate social psychology undertake a more thorough discussion of what is hinted at in one paragraph on page 149—"Social prestige is not everything, and the humblest person may launch a doctrine or ideal which by reason of its strength or fitness will ultimately find favor with the upper social layers. Luther, George Fox, Pestalozzi . . . are men who in some way impressed society without a dais, to stand on." What gives "strength" and "fitness," and what underlies the "in some way"? It is not purely a question of the intrinsic character of the ideas; for no one can ignore the fact that the same idea fares very differently as backed by different men or at different times. At the same time, it is not either a "craze" or a "conventional imitation." We believe that a satisfactory answer to the more complex questions of social influence will involve the more thorough analysis of the social nature of the self. It is precisely the more complex processes of social judgment, social sentiment, and social will which are most important, and these are not adequately treated by a social psychology limited essentially to the categories of suggestion and imitation. And while different workers may for a time center attention on different aspects, these will need to be brought together, and the name social psychology is likely to be that under which they will fall.

In closing, a general remark may be offered. A text of this sort intended for class use suggests the question whether we are not likely to have in the not distant future a psychology far more useful for the moral, social, and historical sciences than has thus far been worked out. The attention given by present-day psychology to the special senses and to the other topics most prominent in the current texts is doubtless important for the physician and educator, but it perhaps is not patent to most undergraduate students just how the psychology which they study prepares them for the moral and social sciences for which they are told it is an indispensable propædeutic. The tradition of Hartley has prevailed over

that of Adam Smith. We trust that this book of Professor Ross and others which will follow, conceiving, as we believe they will, the subject of social psychology in a more comprehensive fashion, will restore the balance of interest.

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A Theory of Mind. JOHN LEWIS MARCH. New York: Chas. Scribner's Sons. 1908. Pp. 432.

This bulky volume undertakes to clarify the field of psychology, and, as the preface puts it, to "break the deadlock" between that science and biology. The writer holds that he is the first to set forth a complete modern theory of mind, though much has been done in the way of accumulating psychological data.

The basal fact of mind is, for the writer, the impulse. Impulse, together with the act resulting from it, constitutes instinct. Such impulses are found not only in living matter, but in all matter—in the atom and the molecule, the crystal and the cell, in the simplest living forms as well as in the highest, man. All matter, therefore, in its degree, possesses mind. Mind and matter, moreover, though never to be confused, are not two separate kinds of existence, two distinct though parallel series. They are the same thing from two different points of view. "Matter to itself is mind. Mind, as it reveals itself to another mind, is matter. . . . The world as discovered outside of us, is thus made up entirely of matter; the world as discovered within us is entirely mind" (p. 15). "The realm of mind is the realm of matter as that realm is to itself" (p. 17). The position taken is thus monistic; the dualism resides in the way in which matter is regarded.

Chapter II. deals with fusion, which is defined as "the act and state in nature when two or more units combine and form a single unit of a higher degree of complexity. . . . The most marked characteristic of a fused unit is that under favorable conditions the individuality of the units of which it is composed is submerged. The fused unit is thus a true unit and not an aggregation. It appears to possess qualities and powers different from those of the component units" (p. 23). The simplest fused unit is the atom; then comes the molecule; then follow the crystal on the one side, the unicellular plant or animal on the other; then, the multicellular organisms. Beyond this, fusions are incomplete, but the tendency is always present in social organization. The simplest fusions are of similar molecules; the more complex are of molecules that vary more or less from the primitive type, resulting in subfusions of the more homogeneous molecules within the organism. Hence arise various organs, all controlled and modified by the organism as a whole. The nervous system is one of these subfusions. To itself it is mind. There is also a less-specialized mental aspect of the organism as a whole, the "body-mind," within which and in relation to which the "nervous-system-mind" operates. This body-mind gives us "(1) the sense of health and

well-being, with its focus often, apparently, in the intestines, liver, etc.; (2) the feeling of affectionate desire, with its focus often in the sex cells; (3) the feeling of loneliness, apparently without special focus" (p. 43).

The three types of awareness furnished by the body-mind correspond to the classification of instincts as (1) the material, having to do with the welfare of the body, (2) the personal, having to do preeminently with sex attraction, and (3) the social, having to do with the tendency toward a higher type of organism than the individual.

Chapter III. discusses the progressive fusions from lower forms to higher, and deals in considerable technical detail with the nature of impulse, setting forth as axioms its characteristics in physical terms of liberation of force, attraction and repulsion of units and their sensitivity to physical stimuli such as light, heat, electricity, chemical action. The attainment or non-attainment of a state of equilibration is accompanied by a feeling of pleasure or pain, or, more properly stated perhaps, by a feeling of satisfaction or dissatisfaction.

To the reviewer, the clearest and most unequivocal part of the book is the classification and analysis of instincts, occupying nearly two thirds of the volume. The topic is one that has always seemed to her illogically and conventionally treated in the ordinary psychological texts, and the present discussion contributes much in the way of distinctness and concreteness, although the term is stretched to cover nearly all mental phenomena. As has been said, impulse is made the basal fact; when it is action in relation to a definite object, it becomes instinct. But neither the vague impulse nor the definite instinct involves thought anterior to experience, and not always after it. Its first conscious results are only those of satisfaction or dissatisfaction. In higher forms memory enters, involving recognition and recollection. But at the root of all action is the immediacy of instinct. Thinking is removed from a position of supremacy. "Thought is . . . in essence, only the handmaid of the impulses and does not exist for itself, nor has it any significance in itself. Psychology has pretty regularly misconceived the merely economic value of reason" (p. 135). The three groups of instincts, material, personal, social, are graded as cell instincts, body instincts, extra instincts, practical instincts, recognition instincts, thought instincts, and ideal instincts.

The sexual instincts are classified under the personal group. They are aroused by personal attractiveness, and only through their results call forth the social instincts. These social instincts are described with fullness and insight. The fact that they alone give rise to the moral and the religious worlds, the social significance of language, of art, of the self, of leadership, all receive suggestive treatment. The conflicts and reinforcements of the material, the personal, and the social instincts are pointed out, especially the illegitimate transference of the idea of exchange from the material or economic world to the social and moral world, of the idea of loyalty from the personal to the social. The modern view of the priority of the social view of life to the individual is maintained. "It is not the private and individual sides of life that develop first, but . . . on the con-

trary, until the invention of printing there was little individuality in the world" (p. 328). The social value of the past is recognized and the growing social importance of the future. In this connection, it is interesting to note that all education is defined as in a sense a game, a rehearsal of future activities (pp. 340–2).

The book as a whole impresses the reviewer as essentially a piece of closet thinking. It reflects little of the tone or the terminology of current psychological discussion, and uses terms in quite other than the commonly accepted meanings. And she suspects that its biology is also more of the library than of the laboratory. Yet it betrays wide reading of modern biological literature, although its references are casual and meager. The earlier chapters strike her as open to considerable criticism from the philosopher, the psychologist, and the scientist; but the later chapters seem worthy of the attention of the student of social psychology and of ethics.

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JOURNALS AND NEW BOOKS

REVUE DE MÉTAPHYSIQUE ET DE MORALE. March, 1909. *Pour la science livresque* (pp. 161–171): J. TANNERY. – An attempt to show the legitimate place of book-knowledge for the scientist. *Formes et critères de responsabilité* (pp. 172–202): M. CALDERONI. – A study of the conditions of penal responsibility, which is punitive, and of civil responsibility, which is reparative. *La morale d'Épictète et les besoinsprésents de l'enseignement moral (fin)* (pp. 203–236): L. WEBER. – The value of Epictetus's teaching is primarily in its method, which is experimental in the true sense. It forms a necessary introduction to moral life, and is, as introductory, better for the fact that it does not make use of the very complex notions of altruism and solidarity which must be introduced later. *Note sur le théorème d'existence des nombres entiers et sur la définition logistique du zéro* (pp. 237–239): A. REYMOND. – A vicious circle is implied by the ordinary logistic definition of the null class and the mathematical zero and therefore the establishment of the existence of the whole numbers is invalid. *Études critiques. La religion d'aujourd'hui:* G. SOREL. *Questions pratiques. Expérience de double traduction en langue internationale:* L. COUTURAT. *Conditions d'une doctrine morale éducative (suite):* J. DELVOLVÉ. *Supplément.*

Urban, Wilbur Marshall. *"Valuation: Its Nature and its Laws—Being an Introduction to the General Theory of Value."* London: Swan Sonnenshine & Co. New York: The Macmillan Co. 1909. Pp. xviii + 433. $2.75.

Perry, Ralph Barton. *The Moral Economy.* New York: Charles Scribner's Sons. 1909. Pp. xvi + 267. $1.25.

NOTES AND NEWS

THE *Aethaenum* for April 24 contains the following note: "A curious question is raised by Dr. P. Baroux and Dr. L. Sergeant in an article in the *Revue Scientifique* on the 10th instant on 'The Influence of the Soil on the Face and Character.' One of the authors practises medicine in Flanders, the other in Picardy, and their observations are drawn entirely from these two countries, which, although neighbors, have an entirely different geological formation, Flanders being as flat as Picardy is hilly. These differences show themselves, according to the authors, in variations in the shape of the nose and cheeks, the hair, and the ears; and they are exhibited not only in the human race, but also in the dogs, horses, cattle, and sheep of the two countries. This is illustrated by many photographs which would be more convincing did they not remind one so much of the woodcuts in Baptista Porta's 'Magia Naturalis,' by which that ingenious author strove to prove that there are men with leonine, bovine, and other dispositions, because their faces have the same contour as that of the animals which they are supposed to resemble. MM. Baroux and Sergeant, however, account for the variations observed, by the theory that the more humid air of Flanders, for instance, makes a nose with more widely opened nostrils, finer and more abundant hair, and the like, a physiological necessity. The idea is well worked out, and while the authors' arguments are not convincing when they take up the psychological side of their thesis, they may be commended as one of the few serious attempts that have been made to find a scientific basis for the study of physiognomy."

PROFESSOR I. WOODBRIDGE RILEY, of Vassar College, delivered the annual address before the American Medico-Psychological Association at Atlantic City on June 2. The subject was "Mental Healings in America."

AT the recent commencement of Columbia University the degree of doctor of letters was conferred on Professor Mary Whiton Calkins, professor of philosophy and psychology in Wellesley College.

PROFESSOR DICKINSON S. MILLER, of Columbia University, delivered the Phi Beta Kappa address at Hobart College.

NEW YORK UNIVERSITY has conferred its doctorate of laws on Dr. Borden P. Bowne, professor of philosophy in Boston University.

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EDUCATION AND PHILOSOPHY

PROFESSOR CREIGHTON'S paper in a recent number of this JOURNAL calling attention to the possibility of a "philosophical platform" is of sufficient importance, in connection with the addresses which suggested the article, to warrant further discussion. The subject may be regarded as Professor Creighton himself regards it, as a matter for the philosophers to consider. Thus he writes: "A formulation of results and principles would furnish to philosophers themselves a starting-point for further investigations, and thus promote unity and continuity of effort." This is in large part true. There have been times when it seemed that the work of philosophy consisted in emphasizing difference, not merely of results, but of methods and problems as well. Sometimes, too, the course of philosophy has led into the "doldrums," and then the philosopher has drifted without tide, wind, or, apparently, compass. In view of such facts, it is well to be reminded that philosophy should know its business and with diligence give itself to its proper tasks. But, as no one knows better than the philosopher, the times when difference is taken for knoweldge, or indifference for wisdom are rare; and there has been at all times a pretty general agreement, understood if not expressed, among all schools both as to the aims of philosophy and the spirit in which these aims are to be prosecuted. If this spirit and the objects of its inquiry have not been emphasized sufficiently, it is because the need has not been felt or has been felt to be superfluous. If we raise the question with any other intention than securing closer cooperation among the workers in this field, as, of course Professor Creighton does not, I cannot help feeling that the question itself is somewhat anomalous. There is nothing, so far as I am aware, in the present condition of philosophy to suggest that it is either traditionally moribund or is prodigally wasting its inheritance. On the contrary, there seems to be on all sides the conviction, not in one country alone, but in many, that the paths are pretty clearly defined along which, in the immediate future, the advancement of philosophy will lie. Who, among those who know, has not been impressed with the

fact that in our own day for the first time in its history philosophy is realizing the promise of its modern beginnings and is truly, and not merely expectantly, international? When, too, a psychologist receives knighthood for his eminent attainments, and a philosopher—who withal finds his problem centering in "God, freedom and immortality"—is awarded a prize, which ranks him with the leading scientists of the age, because of his conspicuous services in the advancement of human knowledge, it is not a time when philosophers are going to listen to counsels of despair or to acknowledge intellectual bankruptcy. If, from this point of view the question means anything at all, it is an expression of the self-consciousness which has come to birth with successful work; its value is esthetic, and not pedagogic.

When, however, we change our point of view and look at philosophy in its educational relations, it takes on a new aspect. What philosophy is to the philosopher and what it is in an educational scheme do not seem to be quite the same thing. Now it is when we understand this difference that some light is thrown upon the question before us. The difference, it is fair to say, is one of the results of the changed educational outlook which characterizes our own day. Our educational practise has been guided, or misguided, by the determination to be in all things up-to-date. The motives here are chiefly two. There is first what may be called the "Harvard idea." According to this a university's function is to provide the opportunity for learning the theoretical element of any of the subjects which now do, or in the future are likely to, arouse the interest or engage the energies of any of the university's constituency. This has led to the elective system and a great overweighting of university courses, and has resulted through its *embarras de richesses* in the impoverishment of the individual's faculties and the narrowing of his attainments. President Hadley in his 1908 report says on this that "the great and well-deserved success of Harvard in many other lines where she was right led our American colleges to follow her blindly in this one where she appears to have been wrong. But we are coming to recognize that a smaller number of studies well taught will give a student a far better idea of the direction in which his powers really lie, and will lead him to conserve those powers instead of dissipating them." Not only at Yale, but elsewhere, the elective system is being put under restraints which in a measure restores to its proper place the educational experience of the past in the education of the youth of to-day. The other motive determining an up-to-date educational policy is connected with the founding and increasing importance, in the educational practise of the country, of the state universities. The history of these institutions carries us

right into the heart of the "practical" aims which have made such a popular appeal and which have for a quarter of a century more and more controlled our educational policy. Now if we take these two motives together, we shall see the direction in which education has been moving for a number of years. Coincident with the first is the enlarged place that the pure sciences have taken in university curricula, and with the second we confront the problems of applied science in their relation to the convenience and profit of men.

These changes in our educational outlook have had considerable influence upon the educational values attaching to the various branches of study. It is not possible, nor is it necessary, to follow out in detail this aspect of the subject. I shall confine myself to two remarks. The first is that when education gave to the pure sciences the opportunity and means to develop their special lines of work, the distinction between philosophy and science became better defined, and on one side and the other this distinction was interpreted into opposition, so that, as one phase of the conflict between theology and science, we have had more or less of conflict between science and philosophy. The importance of this is that, in cutting themselves off academically from philosophy, the special sciences have been thrown into somewhat strange and unnatural associations with the technical and mechanical arts by which, in the period we are considering, they have been displaced and relegated to the second rank. In this situation the pure sciences have managed to hold their academic position because they were able to advertise the gains to be derived, in a practical way, from a cultivation of the sciences. But this has not been altogether favorable to the sciences themselves, and our universities have suffered corresponding loss in so far as they have ceased to be engaged in advancing knowledge in scientific directions, and have become repositories and dispensatories of knowledge already gained elsewhere. Attention was called, some years ago, to this tendency by President P. J. Ehrenheim, of the Noble Institute of Sweden, when he gave as his reason for not considering American scientists in the distribution of the Noble science prizes that "they study science only as a commercial venture." The second remark refers to the growing consideration which, in academic circles, is being given to the study of sociology. A large part of the appeal that sociology makes to students and educators alike is due to its "practical" character. It is on the humanitarian side what the industrial and mechanic arts are on the material. It is a sort of popular philosophy, little complex, easily understood, and, withal, entertaining. It is the only "view of life" most of our students get; better than none, less than the best, and altogether inadequate.

I can not forbear to notice one of the losses which offsets the gains of our up-to-date educational practise. During this period, as we all know, the study of the classical languages and literatures has considerably lessened, if these subjects have not become completely obscured. This falling off of interest in the "humanities" has presented itself, in educational circles, in the form of an inquiry as to the relative cultural value of Greek and Latin as compared with the natural sciences. This question, like so many others in education, is quite beside the mark, and while it affords a basis for contention, it results in a confusion of issues. The fact remains, however, that with the increasing place of science in our curricula, the number of those, in our schools and colleges, who pursue the classical course has steadily decreased, until to-day, for the larger body of our university graduates, the intellectual sources of our Anglo-Saxon civilization, as these are found in the literatures of the Greek and Roman worlds, is, without exaggeration, unknown. This, I affirm, is a serious loss. It is a loss because it leaves us with the arts of civilization without its science; and education—the current majority notwithstanding—is a training in science—in theory—and not in the manners, or mannerisms, of a particular generation. Now if the loss that is entailed upon our age by its neglect of a literary culture is coincident with, it is not altogether due to, the advancement of the physical sciences. It is much more the result of the attitude, method, and aims of the classicists themselves. To the layman nothing looks more abstract, formal, and bare than science, and it would seem that in trying to compete with the sciences, the classicists have succeeded in reducing the study of the languages to the same dimensions. The fact is, of course, that the sciences have a very rich content—the whole wonderful structure of this very complex universe of ours—and it is because the sciences keep their students face to face with the world that it arouses in them a devotion which is the despair of many another branch of human knowledge. And perhaps it is no less a fact that the "humanities" have lost their hold upon the youth of to-day because they have let go their proper content and have offered, instead of bread, a stone. Lost ground is a long time in being regained; and there is no hope of better things until structure is subordinated to language, and language is studied as the vehicle of literature, and literature as the embodiment of the life of a people. Here is a wide field of usefulness which awaits cultivation; and in it we see the hope that the classical studies will take their proper place in our educational scheme.

I have spoken of the classics and the natural sciences because in important respects it is the various relations which these have sus-

tained *inter se* that has determined the place of philosophy in our school systems. Indeed, so bound up is she with all branches of human knowledge that philosophy can enjoy no independent or isolated success. The success, therefore, of any curriculum might very well be estimated in terms of the interest it arouses in, and the impulse it generates in its students toward philosophy. A system for example, which makes it possible for any teacher to be in doubt as to the profit to be derived from the study of philosophy is suspect, and one may be excused for entertaining doubt of the scholarship of that teacher in the field of his special work. Indeed, the general point is well worth raising whether our American teachers of university rank are not lacking, not only in the ideals, but also in the rudiments of scholarship just in proportion to the degree in which philosophy presents itself to the university world as an academic problem. I merely raise the question in passing, and go on to offer a few suggestions as to the bearings of the classical and natural science studies on the place of philosophy in the university curriculum.

Reference was made in the beginning to the serious loss that has come upon philosophy through its neglect of the history of philosophy. This is a point for the philosophers themselves to consider. On its academic side the question seems to be connected with the neglect of distinctively "humanitarian" interests. It is hardly necessary to argue the issue: we all know that the decline of philosophy dates from the introduction of a formalistic spirit in the linguistic studies. The same connection between philosophy and the grammatical interest, for the middle ages, has been pointed out by M. Hauréau in his "Histoire de la philosophie scholastique." On this point it would be interesting to exchange experiences with one's fellow teachers of philosophy, and thus, if possible, to ascertain in what departments of study, if any, the impulses are aroused which lead the student to ask those questions concerning life's meaning and issues, the answers to which are, in large part, philosophy. I doubt very much if such an interchange of experiences would alter to any considerable extent my own observations so far as the classics are concerned. And if we take into account the modern languages, while not so much philosophically is to be expected from the Romance group, the Germanic branch, which in its literature leads directly into the heart of our modern philosophical movements, seems to be in about the same class with the classics. And the reason is the same. We are much more interested as teachers and students of languages in translating than we are in reading, and why this is so is that grammar, and not the life and thought of a people, is taken as the basal thing. Now I think it well to state unequivocally,

that philosophy has certain rights which this condition completely ignores. Its minimum claim is that in the early years of the university course our students be introduced to the literatures of two other peoples in the language in which these literatures are written, and that this be done for the literary and not the linguistic advantage to be gained. Now the point that I am making is that it is the lack of just such acquaintance as this that makes the term "modern thought," for the majority of our graduates, a meaningless phrase. That there is such a thing as an organization of the intellectual and moral forces of an age—of this age—can never become even a dream when the very elements which have gone to the making of this organization possible are undiscovered. In such a situation, how can we ever expect to see our graduates taking hold on the forces of the age in which their life falls and shaping the future, by means to them, into some more equitable pattern? And what is a *university* education for if it is not to give that knowledge of the powers by which human thought and conduct are directed which shall make the graduate a master-man who, by the mind that is in him reveals and interprets the mind that is out of him to the larger or smaller circle of men and women who are around him? Such powers as these in our current educational schemes are left to chance cultivation. It is because I believe they should be the supreme object that I have argued the importance of making available the sources of our modern culture. But this alone is not sufficient, one must, in addition, have carried through in his own experience that process of reconstructive criticism in which an interpretation of the past leads one into an insight into the future—a reconstruction which sums up the crucial epochs of racial development—if he is to meet the demands of our complex civilization. Or, in simpler terms, the necessary and inevitable supplementation of a literary culture is to be found in a philosophical study of the problems of human life and thought in their historical relations. But lacking the literary foundation, philosophy in this aspect is starved at its sources.

The educational history and relations of the natural sciences also have had their effect upon the academic position of philosophy. Originally, the material which now forms the subject-matter of the special sciences was cultivated by philosophy. The specialization which is a characteristic of the present has separated those particular inquiries into matter-of-fact relations from those other inquiries into the inter-relations of specified groups of phenomena. This has been, without doubt, to the advantage of our knowledge of the world in its various aspects. But if, as I have suggested, philosophy has suffered through lack of sympathetic understanding of its methods and aims on the part of science, science has suffered through too close

correlation with the technical arts. It is the business neither of philosophy nor of science to be directly concerned with the convenience and comfort of man. Science and philosophy are bound together by their common interest in truth. It is the emphasis placed upon truth when philosophy and science are considered in their mutual relations that has been disturbed in the period I am considering. This is seen in philosophy if we consider to what almost negligible proportions the study of logic has been reduced in most of our college and university courses. If, as I have said, it is a serious thing for philosophy to have neglected the history of philosophy, it is, I am convinced, equally a blunder to dismiss the study of the question of truth—of logic—in a single term or semester. Perhaps that is sufficient time for an introductory course, but it should be followed with courses which, whatever their subject-matter, should not only presuppose but make direct and improving acquaintance with the methods of strict logical thinking. Professor Creighton hints at this when he says that the study of the history of philosophy "involves an active process of philosophizing on one's own part: it requires us to interpret, reconstruct, and evaluate the historical results through our own thinking." That, as any one who is engaged in teaching the subject knows, is true. And it is because it is true that I have always considered the history of philosophy as without a peer as an *introduction* to the specialized problems of philosophy. But what I am arguing for is something more than this. Whatever may be true of the sciences, it can never be true of philosophy that it is content to leave the question of method to the developed tact or skill of the individual; what philosophy is bound to do is to raise the whole question of method into a separate branch of inquiry. But when it does that, logic ceases to be an art and becomes a science, and a science, in some sort, fundamental to all and every species of philosophizing. It is here that our teaching is found lacking, and here we find one of the reasons why it is possible for one of our leading American philosophers to declare that in fifteen years they had not graduated a single philosopher from the institution with which he is connected. This academic practise of passing the student on to the more "interesting" subjects before he has acquired mastery of the instruments of effective and intelligent work, is the reverse side of the neglect into which, among philosophers themselves, questions of logic have fallen. The consequence is that philosophy has been in danger of becoming a branch of literature, and another of the leaders of American philosophers has taken his younger brethren to task for their abominable *style*. Better academic practise may be looked for as the result, within the last few years, of the revived interest, among our American philosophers, in

the subject of logic. Dewey in his "Studies" and Baldwin in the more systematic and comprehensive "Thought and Things" have aroused impulses and provided direction which can not fail to have a bracing effect upon the future course of philosophy in our colleges and universities. At any rate, whether the day of better academic practise is near or remote, we may even now protest the view that philosophy is only "opinion," and that pedagogy is already discredited, which has led us to supposing that we teach best when we get our students to talk, although they have nothing to talk about and no method of ordering their thought in truth-giving directions. Whatever it is or is not, philosophy is not a playing fast and loose with words and a wild flying of an unrestrained imagination. Neither is it literature, although it presupposes a literary culture and may develop characteristic literary forms. Nor is it science, although it presupposes the scientists' work and may develop new instruments of scientific advancement. Philosophy has its own tasks, and it works by definite methods. But, in its relation to education, the most important problem which confronts us seems to be the establishment of philosophy in its right academic relation with the other branches of human knowledge.

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DISCUSSION

WHY NOT PLURALISM?

MONISTIC philosophers for the most part apparently have not thought it worth while patiently and with thorough reasoning to answer the question, Why can not ultimate existence be many as well as one? The attitude of most monists and philosophers of the absolute, and their procedure with the holders of the opposing doctrine, are not calculated to inspire one with respect for metaphysical thinkers as men, or with confidence in metaphysical reasoning. It is in a very summary fashion that monists are wont to dispose of the doctrine which calls itself pluralism. There is a scarcely veiled contempt in their treatment of those who have the temerity to challenge the fundamental article in the monist's creed. The upholders of this creed apparently see in pluralism the sure mark of philosophical incompetence, and the sign that the advocates of this doctrine have abandoned themselves to a wayward and romantic fancy in their world-view. But I am not ignorant of the fact that there are exceptions to this general statement; I am glad to acknowledge that there

are monistic thinkers who are not unwilling to reason with the pluralist, to convince him of his philosophic heresy, and to save him from the error of his way. Mr. A. E. Taylor is an instance of these better minded monists, and I shall, accordingly, let him stand as the representative of the monist's answer to the question I have put as the title of this article.

In his "Elements of Metaphysics," Mr. Taylor has given a monist's reasons for rejecting the pluralist's conception of ultimate reality. Mr. Taylor sets forth in this section what he claims is a strictly logical disproof of pluralism; and my undertaking in the present article is an examination of this disproof. The objections which Mr. Taylor undertakes to substantiate against what he understands to be pluralism, are these, namely: (1) Pluralism misapprehends the facts upon which it professes to base itself. (2) It gives an essentially irrational interpretation of these facts. (3) Pluralism makes knowledge impossible.

It will be at once admitted that if these objections are valid, pluralism must be abandoned as a logically untenable doctrine. A doctrine that begins with misapprehension of its own data, and ends with an irrational interpretation of the facts it relies upon, and issues in absolute impossibility of any knowledge, can be held, it must be admitted, only by those who still believe because they will to believe in the face of reasons that make their faith a mad presumption.

But let us first hear Mr. Taylor's reasons by which he supports these objections to the plurality-conception of ultimate being. I will let him speak, as far as possible, in his own words. "Pluralism begins by misapprehending the facts upon which it professes to base itself." "The fundamental fact from which pluralism starts as an ultimate datum of all experience, is the familiar one, that there are other men in the world besides myself." "The world thus contains minds other than my own; and what makes them other is that the interests and purposes by which these lives are determined are, like my own, unique and incommunicable." "Now, pluralism bids us take the facts as thus stated, as the pattern; this pattern upon which his view of reality is constructed is that of a community, of a great number of selves or persons, each with his own unique interest, and each therefore at once internally simple and indivisible and exclusive of all the rest." "In whatever special form the pluralist thinks of his ultimate realities, whether as physically indivisible particles, as mathematical points, or as sentient beings, it is always from the fact of human socal life conccived in this ultra individual way that he in the last resort derives his concept of their simplicity and mutual repulsing." "Now, this pluralistic statement of the facts is incor-

rect." "The human experiences on which the pluralist relies, present at once too much and too little unity for the purpose of this theory." "The selves or persons are not what pluralism conceives them to be, viz., simple, undifferentiated unities; within each self there is as actual, incompatible, discordant, warring interests; and as between the various selves." "The pluralist's admission of this internal variety within the units, cuts away the ground from under the pluralist's feet"; (because) "if the variety and the mutual struggle between the elements of the self are not enough to destroy its unity; by parity of reasoning the multiplicity of selves in the world, and their mutual repulsions are not enough to prove that the whole of Reality is not, in spite of its multiplicity of detail, a unity more complete than any of the partial unities to be met with in our experience."

In other words, the reasoning is: If the pluralist admits unity as the basal fact in the case of individual reals, he is in consistency bound to admit that unitary being can be the basal fact in the constitution of the world reality at large. The consistent pluralist can not deny that what is admitted to be true of his real beings, is true of the whole of reality. Mr. Taylor argues, that the pluralist is confronted by a dilemma of this sort, viz: he must either conceive his units as beings which possess no internal variety whatever, or, if he gives them variety, "they only repeat the problem they are supposed to solve"; which means, I suppose, that the units as the pluralist must conceive them are incompatible with the character of the real world which pluralism insists upon. The self-contradiction in the pluralist's apprehension of his real beings, and of the world which they constitute, may be stated in this way: The pluralist's supposed units as real beings are mutually repellent, exclusive beings; whereas the truth is, that the beings after which the pluralist patterns his units have no merely exclusive or repellent natures. Thus does pluralism misapprehend the facts on which its doctrine is based.

But pluralism commits a second fatal error in the explanation which it gives of the facts of the world. "The theory which pluralism puts forward to account for them (the facts), is unintelligible." "Pluralism forces upon us the alternative, either the world is not a systematic whole at all, but a mere chaos of purely independent atoms; or else the world is really a system, but a system, so to say, by accident." "The things of which the system is composed are real as detached, separate units, but, by a fortunate chance, they happen all to possess some common relation to an external tertium quid (for instance God), by which they are combined into a system." More concisely put, Mr. Taylor offers to the pluralist this alternative: "Will you keep your real beings? If so, you can have only a chaos

instead of a universe, or a universe made so by accident and wholly unthinkable? Will you, on the other hand, keep your universe? Then must you give up your real beings; because they can not make such a universe intelligible."

Thus does it result that the pluralist can give no intelligible explanation of the facts which he admits. But a third fatality awaits him. If he is consistent, the pluralist must deny on the part of his real beings any knowledge of each other. "Each real thing must be a little world to itself, shut up within the closed circuit of its own internal content." "And thus, supposing pluralism to be true, and supposing myself to be one of the real beings, I should have no means of knowing it to be true" (p. 90). Pluralism, therefore, breaks down on its failure to make our knowledge an intelligible fact.

It is plain enough that, if this argumentation of Professor Taylor is valid, the case against pluralism is closed; and that doctrine is condemned as an impossible *Weltanschauung.* The wonder would appear to be, that any thinker should ever have proposed a theory which tumbles to pieces so easily under the criticism of a little logical thinking. To my mind the wonder is even greater that Professor Taylor should have persuaded himself that a pluralist need hold such a theory; or that any pluralist ever has tried to maintain the doctrine he has so easily demolished. In examining this disproof of pluralism, I shall accordingly maintain in the first place that the pluralist is not consistently bound to conceive of his real beings as Professor Taylor's argument assumes that he must do. Professor Taylor's first objection assumes that the real beings in the pluralist's world, because independent of each other for their existence, are independent of each other in every respect in which they can be viewed; that they are unrelated to each other, each one of these real beings existing with itself and for itself, in absolute indifference toward the other, merely coexisting beings; nay, these individuals are repellent to each other, and somehow adverse to union of any sort; or, if not this, they have no inherent tendency toward relations of any sort with each other. Moreover, according to this objection, these real beings can not have internal variety or differences; they are so poor in content that they possess scarcely more being than just naked existence. If any one of them could take stock of its own nature, it could do scarcely more than to say, "I am I; I have nothing but just barren identity; and besides me, and for me, surely there is no other." But why, pray, should the consistent pluralist be driven to the confession of such utter poverty in the case of his many real beings? Why can not each of these individuals possess variety, internal differences, aptitude for, and necessity for inter-relation with other individuals? In short, why not give to the many real beings

what the monist gives to his one being? Why should internal differences, variety, manifoldness of content, and relatedness, be admissible endowments of the one, and not permissible endowments of the many? The pluralist is no more inconsistent in constructing his many beings after the pattern of the one set of beings we know ourselves to be, than is the monist in creating his one, his absolute, after the analogy of our human self. What has Mr. Taylor or any monistic philosopher ever adduced which can justify in any measure the proposition, that the real beings of the pluralist must be absolutely unrelated, isolated, and indifferent to any sort of relation to each other? Until this is done, I shall maintain that the pluralist has as good a right so to conceive his many beings that they can explain our world of experience, as has the monist so to conceive his one being that he or it can explain this same world.

So much for Professor Taylor's first objection. Let us see if there is any more force in the second objection—namely, pluralism gives an explanation of the facts of the world which is essentially irrational. In considering this objection let us first ask, What are the facts which pluralism attempts to explain? Interrelation, interaction, is not for the pluralist one of these facts. The pluralist frankly admits he has no explanation to give of such a fact. He postulates or assumes on the part of his real beings natures that make interaction possible; while he simply appeals to experience for proof that interaction of some sort is a fact in our world.

A second thing which pluralism does not attempt to explain, is what Professor Taylor calls the systematic unity of the world, or the alleged fact that reality does possess complete systematic unity. For pluralism, this is not a world-fact at all. Pluralism recognizes just as much unity in our world as our experience up to date has found there; and it expects indefinitely more unity than the world of experience is at present known to possess. For pluralism, the actual unity of the world is partial; it coexists along with dis-unity. Our world presents to our human view both harmony and disharmony, both coherence and dissentience, both continuity and discontinuity, both conjunctions and disjunctions; and the pluralist holds that what our world appears to be in these respects, *that* our world really is. Consequently, the monist's world-unity and perfect harmony are not facts which the pluralist has to explain. But, how can the pluralist explain the measure of unity and harmony he admits to exist in the world? The answer is: This unity, or, rather, union among the many beings, is effected by their interaction; the unity that exists in our world of experience is the result of the mutual influence of the real beings; and their failure to unite in harmonious

action, their hostility or indifference to each other, explains the fact that unity in our world is as yet only a partial fact.

Nor is there any such fatal alternative before the pluralist as Mr. Taylor supposes—viz., either a chaos of hostile, unrelated beings, or a unity by sheer accident, or one that is forced upon the elements by some outside and essentially alien power. This unity is no more an accidental fact in the scheme of pluralism than in the monist's scheme—provided the monist leaves any real beings to his individuals. On the contrary, this unity is the outcome and the expression of the natures and interrelations of the various real beings. Nor is it in any real sense forced upon these beings. Pluralism knows of no outside being; the many real beings are the whole of reality; and all that is done, all that happens, takes place within the plurality of beings. A being other than these individuals is a problem for the monistic philosopher only; and to maintain this one, and at the same time to save the many, except as individuations or modes of this one, all, and only truly real being, is, I think, the yet unsolved problem of monistic philosophy. However that may be, the pluralist is not logically compelled to the assumption of any such reality over and above his plurality of real beings.

I think I am justified in concluding from this examination, that Professor Taylor's second objection to pluralism is not valid. The pluralist is not forced by any metaphysical or logical principles into the fatal dilemma that his critic has placed before him. These considerations deprive Mr. Taylor's last objection, the epistemological one, of all force. How any being can know another being is, like reality itself, an ultimate mystery; but fortunately it is not a problem for our finite minds. That beings *do* somehow know each other, is an indisputable fact of our experience; and the pluralist simply accepts this character of our experience; and he sees no more difficulty in so doing than in accepting the more general fact of interrelation or interaction, the how of which is equally a mystery in any philosophical scheme. Knowledge being only a special form or particular instance of interaction, offers no peculiar difficulty to the pluralist; and, unless it can be shown that pluralism must so conceive of his real beings as to make any interrelations impossible, it is not shown that his *Weltanschauung* makes knowledge unintelligible; and I think I can safely assert that the monist has not as yet made good the assertions that the individuals which compose the pluralist's world must be unrelated and, therefore, isolated and incommunicable beings.

My conclusion from this examination of a monist's attempted disproof of pluralism is: This doctrine remains a theoretically admissible doctrine of ultimate reality. Whatever reasons there may

be for not accepting it, are not reasons which decide a philosophical choice by constraining the logical undertaking, the merely theoretical judgment. Pluralism takes its place alongside of monism; and whoever rationally makes a choice between them, can do so only after a careful weighing of the advantages and disadvantages which attach to each; for neither can claim that its acceptance is attended by no difficulties, no disadvantages; each can claim supporting reasons and desirable issues in our total experience.

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PRAGMATISM AND SOLIPSISM

HOWEVER astonished were the expounders of pragmatism at the indictments of "subjectivism" and "solipsism" returned by the critics in the early days of the movement, on reflection these charges were not difficult to explain. In general the explanation was that pragmatists had assumed, prematurely, as it now appears, that the ghost of solipsism had been laid. For more than a decade preceding the beginning of the pragmatic movement, philosophers, especially in America and France, were busy expounding the social character of consciousness—of the "private," "individual" consciousness—both in its origin and function. The outcome of this exposition seemed to be that the consciousness of an individual was not to be considered a function, or a correlate of his "organism" or "mind" *only,* but that both the organism and "its" mind were to be thought of as arising in and belonging to a "social situation."

This conception apparently was generally accepted. And this acceptance would seem to have warranted the assumption that solipsism was dead. It appeared that every one was ready to start with our every-day neighborly world of social intercourse and to regard individual consciousness as an organic function of that world. It seemed as if philosophy might now go on to a fruitful, detailed study of this social process, and might talk of consciousness, of ideas, needs, purposes, yea, even of "my" or "your" ideas, needs, and purposes without danger of solipsistic interpretations.

At any rate, this was the supposition of pragmatists whose writings followed close upon these studies of the social nature of consciousness. They assumed that the solipsistic, windowless monadic conception of the individual was a thing of the past. But alas, as the returns from the critics began to come in they discovered how

ill they had reckoned. They found that the critics, many of whom[1] had themselves done yeoman service in developing this social conception, either attached no such significance to the results of these investigations or refused to allow pragmatists to do so. It was evident that, for some of the critics, the chief value of the social conception of consciousness was its supposed service in clarifying the conception of the relation between the finite and the absolute, though to pragmatists it seemed to undermine, rather than support that conception. For by just so much as this exposition of the social character of consciousness made the relation of the finite to the absolute conceivable, by even so much did it make it unnecessary. Hence the absolutist was obliged to *nolle pros.* his part of the case and to resolipsize the individual in order to preserve the necessity for the absolute. The dilemma was: if finite experience is such that the conception of the absolute is possible, it is such that the latter is useless; if finite experience is such as to need the conception of the absolute, it is such as to make that conception impossible.

For others, the results of these investigations into the social character of the individual were regarded as having special value for ethical theory. For still others, they were just interesting psychological "discoveries" whose logical and metaphysical consequences either were of no interest or were unappreciated.

Now the pragmatist confidingly took this conception of the perfectly objective and social character of consciousness at its full face value, with no discounts or rebates in favor either of absolutism or of intellectual realism, and set out to develop a logic and a metaphysics on that basis. Hence it seemed to him, at first, that the critics must be joking when they cried "solipsism." But as soon as it was clear that they were desperately in earnest, the pragmatist hastened to explain why he had put up no special guard against such an interpretation. Again and again he proclaimed that he had only accepted in good faith the social evaluation of consciousness which the critics had themselves, in many instances, helped to make. Over and over he "explained" that he had supposed this view of consciousness had settled forever that ideas, hypotheses, are no more "subjective" *because* they are constructed in or through individual minds or brains than a house is subjective because constructed by individuals.

In the face of these specific, repeated, and vociferous protestations from pragmatists, it is difficult to comprehend how any one, without at least discussing this social conception of consciousness, could

[1] Cf. *e. g.*, the contributions of Professors Royce and Baldwin to the social conception of the individual and the solipsistic assumptions in their criticisms of pragmatism.

blandly reiterate the solipsistic objection. And yet in the latest anti-pragmatist volume (Professor Pratt's "What is Pragmatism?" in many respects a keen and stimulating book), this is just what has happened. Professor Pratt says: "It is interesting to note . . . that all Professor Dewey's and Professor Moore's contributions to studies in logical theory . . . could perfectly well have been written from the standpoint of solipsism—and in fact it is difficult to see how some of them could have been written from any other" (p. 123).

And the wonder grows when one reads again Professor Dewey's explicit and, one would think, completely destructive reply to this same statement when it previously appeared in a "discussion" by Professor Pratt in this JOURNAL (Vol. V., p. 375). In his reply, Professor Dewey points out that Professor Pratt's whole discussion is based on his conception of truth as a "correspondence" between an idea in "a private stream of consciousness" and "outer realities which never come within one's own private stream of consciousness." Professor Dewey then goes on to show how completely mythical such "a private consciousness" and "outer realities" are on his view of the judgment. Without even discussing this explicit and complete repudiation of "the private stream of consciousness," to say nothing of equally specific rejections by others, Professor Pratt calmly reprints in his book his private-consciousness-outer-reality view of thought, and his charge of "solipsism," *based on the attribution of this view to pragmatists!*

It is difficult to see how philosophy is to get forward at this rate. Had Professor Pratt given what he regarded as a vindication of his "private-consciousness" theory, he might then have appropriately reaffirmed his indictment, even though it precipitated the dilemma that in the degree to which his vindication was successful, the indictment would return upon his own view. In a foot-note (p. 123) Professor Pratt does quote a passage from Professor Dewey's refutation of the private consciousness view, but instead of dealing with this he drops it and goes on to answer certain questions which Professor Dewey had put. And these "answers" show not only that Professor Pratt still holds his "private-consciousness" view as if it had never been challenged, but that he still assumes that the pragmatist also is talking from this standpoint. Thus after granting that "certainly hypotheses and theories serve to direct observation and guide experimentation," he adds: "But the fundamental question is, how is it possible for them to be instruments and what is it that makes some successful guides, and some unsuccessful? So far as I can see, the pragmatist has no answer to this." But the pragmatist's "answer" has been there, life-size, from the beginning. The reason Professor Pratt can not "see" it, is that he is still shut up, and is trying to

shut up the pragmatist with him, in his windowless "private consciousness."

Before passing to the pragmatist's answer, Professor Pratt's own solution should be noticed. He says: "The non-pragmatist's answer of course is, that hypotheses succeed in guiding experimentation in so far as they correspond to the already existing reality which is their object and which they mean."

Elsewhere Professor Pratt intimates that he finds pragmatists, as one might expect, somewhat naïve in matters of formal logic. How naïve he regards them may be imagined if he expected that pragmatists would not see that his "answer" merely shifts the problem from that of "guidance" to that of "correspondence" and that they would not ask how "correspondence" is possible on the "private-consciousness" view of judgment. This is the pragmatists' "prior and fundamental question" to the intellectual realist. And Professor Pratt has an answer to this (pp. 68–69), viz., that correspondence is an "ultimately simple," "irreducible," and "mysterious" relation, incapable of explanation, and that, therefore, the question "how it is possible" is "absurd."

In passing, the pragmatist will wonder, if correspondence is so "simple" as to make the demand for explanation absurd, why "guidance" should be such a burning question for which the pragmatist has no answer? And he might also observe, that if he has found no answer to the question on "guidance" up to this time, surely with the model of Professor Pratt's answer to the "correspondence" question before him he need be no longer dumb. He would have only to say: Guidance is an "ultimately simple" and "irreducible," even if "mysterious" relation. Perhaps the pragmatists' naïve logical sense might suffer some misgivings that such a solution begs the whole problem, to say nothing of its depragmatizing tendency, but—that is another story.

It is already obvious that the pragmatists' "explanation" of how it is possible for ideas of a "private consciousness" to be "instruments" and "guides" lies in his view of the social origin, nature, and function of this "private consciousness." This, of course, is but another way of saying that while consciousness doubtless is in some sense "private," it after all is not so *"awfully"* private. Surely we are all prepared to grant that however "private" consciousness may be it is somehow born of a thoroughly social, objective world. So much I suppose would not be questioned. But at this point our ways of thinking begin to diverge. Some apparently believe that although the individual consciousness is born of our social world, it is either born blind or, as soon as it is born, it is cast into a solipsistic outer darkness, so dense that the possibility of

its ideas or hypotheses agreeing with "things" becomes indeed a "mystery"; and a mystery which presupposes another equally dark, namely, how this outcast, abandoned "private consciousness" comes by its hypotheses.

Now the pragmatist, at least that "variety" of pragmatist with which I am acquainted, thinks of this "private consciousness" not only as born of, but as growing up in and, therefore, continuing all the while vitally and organically related to its matrix. *Not only in its origin, but in its continued development and operation must it always be a function of the whole social situation of which it is born.* However "private" or "individual" consciousness may be, it is never to be regarded as *wholly* or *merely* the function of an individual "mind" or "soul" or *of a single organism or brain.* I have just italicized the phrase: "of a single organism or brain." By this I wish to emphasize the fact that much of our "biological" and "functional" psychology, which often speaks so patronizingly of the old soul-psychology, is logically just as solipsistic as the latter. If consciousness is wholly a function of a single organism or brain, how much better off are we so far as the logical problem is concerned than we are with consciousness a function of a single soul or mind.

This "subcutaneous" conception of consciousness, as Professor Perry aptly calls it,[2] has its correlate in the equally "subcutaneous" and solipsistic view of the nervous system which regards it as merely the "coordinator" of the rest of the functions of the organism *only.* The environment, to be sure, figures dimly in the background as that "to" which the organism is to adjust itself, whatever this can mean. With this belongs also the no less solipsistic conception of the activity of the organism as consisting merely in a competitive "struggle for existence" with other organisms.

How grotesquely inadequate these conceptions are, becomes apparent the moment we try to apply them to the concrete activity of a physician, a lawyer, an architect, or any other expert to whom I delegate the adjustment of "my" troubles. While the cure of the toothache, of the quarrel, of the house, is "my" problem, it is also and no less and at the same time "his." Conversely his effort is as truly and as much to adjust me as to adjust himself. His thinking is as literally a function of my organism as his own. *His* effort is *my way* of making *the* readjustment, which belongs equally to both of us. When the pragmatist, therefore, talks of attention and thought as arising at the point of a need for readjustment, this need must not be taken to mean the need of some one,

[2] Cf. Professor Perry's very suggestive paper on "The Mind Within and the Mind Without," this JOURNAL, Vol. VI., p. 169.

lone, marooned organism or mind *only*. The readjustment is always in and of a "social situation."[3]

Now when one fully accepts and *steadily holds on to* this notion of the social origin and function of consciousness, it ought not to be difficult to understand why for *him* the question of the possibility in general of ideas and hypotheses of a private consciousness serving as "instruments" and "guides" would not arise. From this standpoint the presumption is all the other way. The question might much more intelligently be: How ideas ever *fail* to guide? And indeed they never do fail to "guide" in *some* way. They are never absolutely impotent. They always effect *some* transformation.

This brings us around again to the problem of truth and error, which is a question not of the *complete* efficiency or impotence of ideas, but of the *kind and degree* of efficacy they have. At this point it is clear from the amount of writing which continues from the standpoint of "the private stream of consciousness" that there is need of a return to a direct discussion of the "social-situation" conception of consciousness and of its application to the judgment—especially to such extremely "realistic" instances as Professor Pratt's "toothache" case, which he seems to regard as peculiarly crucial for pragmatists. This I hope to take up in another paper.

ADDISON WEBSTER MOORE.

UNIVERSITY OF CHICAGO.

REVIEWS AND ABSTRACTS OF LITERATURE

Institutiones metaphysicæ specialis. Tomus Quartus. *Theologia naturalis.* P. STANISLAUS DE BACKER, S.J. Paris: Gabriel Beauchesne & Cie. 1908. Pp. 306.

The revival of scholastic philosophy, which sprang from the Italian peninsula during the latter part of the last century, begins to receive in our country the attention to which it is so justly entitled. Courses on Thomas Aquinas are now given in our leading universities. Learned studies on neo-Thomism are made by some of our most profound thinkers, such as Brother Chrysostom and Professor Royce. Our philosophical publications give them a hearty welcome. The interest afforded us by the most recent contributions to neo-scholastic literature is thus greatly increased by this attitude of our thinking world.

The volume entitled "Theologia naturalis" is the fourth part of a complete course of scholastic philosophy entitled "Institutiones metaphysicæ specialis," the first volume of which appeared in 1899. The author, Stanislaus de Backer, born in 1851, entered the Society of Jesus

[3] It is worth noting that it is this "subcutaneous" psychology that has set most of the problems for ethical theory. A large part of the theory of ethics seems to consist of conceptual devices for getting around a solipsistic psychology, whether of the "soul" or of the "biological" type.

at the age of seventeen, and is now professor of special metaphysics in the Jesuit college of Louvain.

The volume may be roughly divided into three different parts: the first comprises the first two chapters and is devoted to the arguments in favor of God's existence; the second extends from Chapter III. to Chapter VIII., and studies the divine attributes; the third, which includes the remaining three chapters, is concerned with the relation of God to the world.

In neo-scholastic philosophical literature, all acceptable proofs of God's existence were generally divided into three classes. There was the argument of the first cause, also called *metaphysical* argument; the *physical* argument, derived from the manifold and beautiful order of nature; and the *moral* argument. Fr. de Backer contends that this division is verbal rather than real, because the metaphysical, as well as the physical argument, starts from the consideration of physical facts, and he concedes to the moral arguments alone the right of forming a separate class.

The author's favorite proof of God's existence is based upon the principle of causality. All beings, he says, are either beings by essence or beings by participation. A being by essence (*ens per essentiam*) has in itself the reason of its existence; a being by participation (*ens per participationem*) exists only in virtue of the causal action of some other being. If the world can be proved to be a being by participation, we shall be compelled to admit the existence of a being by essence external to the world and on which the world depends in its existence and its essence. Fr. de Backer sees in the energy possessed by material things an unquestionable proof of their contingent character. All material beings, he says, are endowed with energy. They do not possess this energy in virtue of their own essence, otherwise they would be unable to pass from one form of energy to another. They receive it, therefore, from a cause external to the world (p. 58).

Whether this argument, and the argument from motion—St. Thomas's favorite proof—upon which the author also insists, will appeal to many modern minds, I am unable to tell. Some persons seem to regard them as absolute proofs. I am sorry not to be able to share their enthusiasm. I would not assert that human reason is unable to reach a knowledge of God's existence, but might it not be questioned whether a satisfactory proof of the existence of a supreme mind has ever been formulated? Innumerable arguments for the existence of a divine being have been adduced, some altogether valueless, others well deserving our attention. But do they possess the character of absolute proof? Do they amount to anything else than a reasonable ground? And is it not more in harmony with the spirit of Christianity that it should be so? That faith is a virtue is a capital point in Christian belief; but if we were convinced by pure reason of the existence of God as we are convinced of a mathematical truth, where would be the merit of our faith?

In the part of his work dealing with the divine attributes, Fr. de Backer strongly insists upon the simplicity of the divine essence. "Quæstio, quæ hic agitanda est," says he, "respicit Deum, non ut in se

est, sed ut ab intellectu nostro ex consideratione rerum creatarum analogice concipitur (p. 101); Deus in seipso spectatus est forma simplicissima" (p. 100).

As I have already pointed out elsewhere,[1] the charge so often brought against the old theistic writers—that they conceived the divine being as a bundle of unconnected attributes—is utterly devoid of foundation. Fr. de Backer's work is a new proof of the fact that the God of Scholasticism is no less simple, and probably no less consistent, than the absolute of the Hegelian school. The limits of this article do not allow me to make a detailed study of the divine attributes studied by Fr. de Backer. Let the reader who is interested in them peruse the learned pages of the eminent Jesuit and he will be well repaid for his labor.

It is hardly necessary to say that, in the question of physical premotion, Fr. de Backer sides with Molina, and condemns the Dominican doctrine as destructive of human liberty. He even contends that it makes God the cause of all sins (p. 206), a truer cause than the sinner himself (p. 207). And this dispute recalls to our minds the famous dissension between the Dominicans and the Jesuits, so ably portrayed by Pascal in his immortal "Provincial Letters." It compels us to admit that the Jesuits of to-day—in spite of the oft-recurring assertion that they differ *toto cælo* from those of the seventeenth century—have still the same spirit as their older brethren, the same theology, nay even the same morals.

In some points bearing upon the relation of God to the world, I am inclined to differ from Fr. de Backer and from most neo-scholastics. Fr. de Backer admits with St. Thomas that human reason is unable to decide whether the world had a beginning or not. He also agrees with the Angelic Doctor in finding in Holy Scripture a proof of the real beginning of the world in time. But, unlike St. Thomas, he sometimes seems to regard creation as an act that took place in time. In his discussion of the possibility of an eternal creation he had made it perfectly clear that the priority of the creator over the creature is not a priority of duration, but a priority of nature. "Creatio non est effectio rei post nihilum, si illud post ad durationis ordinem referatur; sed est effectio rei e nihilo. Ut res autem e nihilo fiat, satis est nihilum prioritate naturæ antecedere ejus esse" (p. 253). But, why does he add in the next paragraph that the difference between creation and conservation lies in the fact that a thing is created in the first instant of its duration and is conserved in the remaining part of the same (p. 254)? St. Thomas is very careful to assert that creation and conservation are not two different acts, but one and the same, and that this act did not take place in time: "est sine motu et tempore."[2] And, indeed, how can we admit that the creation of the world was a thing done once for all at a certain date, and at the same time hold that God might have created a world without a beginning in time? What would then become of creation? Is it not more consistent with the Thomistic doctrine to assert that creation and

[1] Cf. "Revival of Scholastic Philosophy," p. 134; this JOURNAL, Vol. V., pp. 178 ff.

[2] "Summa Theologica," I., quæst. CIV., art. 1.

conservation are two different human views of a thing which is one and the same in itself; that God creates in a perennial present a world which may or may not have existed forever?

JOSEPH LOUIS PERRIER.

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L'ame et le cerveau. Par Docteur SURBLED, Médecin de L'Hopital Anne-Marie. Deuxième Edition, revue et augmentée. Paris, 1907.

This work is intended as an argument against materialism. It is written with the purpose, everywhere evident, of establishing the existence of the soul as an entity superior to the body and distinct from it. The author is a pronounced adherent of the doctrine of cerebral localization, and the most interesting addition that he has made in the second edition of his work is the statement that the "lobe of memory" has been discovered and that its seat is to be found in the "*lobe moyen ou temporo—parietal gauche.*" This discovery, which Surbled declares is one of the most brilliant in cerebrology, was made by Professor Pierre Marie, head of the hospital at Bicêtre, who, in that capacity, had the opportunity for ten years to observe many cases of aphasia and to perform autopsies on more than half of the patients. The results of his investigation are published in the *Semaine Médicale* of May 23, 1906.

In order to establish his contention of the independence of the higher mental faculties, while at the same time holding to a thorough-going localization of cerebral functions, Dr. Surbled makes a radical separation between intelligence and sensation, placing imagination and memory in the latter category, and reason and will in the former. Reason and will are the immaterial soul, while sensation, with imagination and memory, are common to both man and brute. The objects of sensation are necessarily extended and material, while abstract thought has to do only with intangible objects. The cerebrum is essentially an organ of sensibility and of movement, but not of thought. While it is quite possible to localize the sensational elements of our mental life, it is impossible to do this for the higher intelligence.

Surbled therefore attacks with vigor the theories of Flechsig, declaring that his attempt to find the centers of association has shown itself false. These centers are, according to the statement of Flechsig, "the actual organs, or rather the actual instruments, of thought." This theory, says Surbled, is the product of imagination, "a pure romance, which is perhaps fascinating, but which has not the basis of facts." For a similar reason the author criticizes the theory of Grasset, who found two distinct levels of intelligence, the one in the inferior centers, the "polygone," the other in the superior centers "O," where reside our highest powers, intelligence and will. This theory is, according to Surbled, practically that of Flechsig—the center O being a substitute for the centers of association and the "polygone" for the centers of projection.

Surbled declares that the frontal lobes, far from being the seat of intelligence, are centers of sensibility and motor control like the rest of

the cortex. In support of this contention he states that it is established by extensive clinical observations that Jacksonian epilepsy is not confined to a lesion of the Rolandic region, but that it may arise from a lesion of the frontal lobe itself, or at least from the region posterior to that lobe. Following Marie, he attacks in general the previous work done on aphasia, and says that it is in contradiction to other facts. The localization of Wernicke, in particular, is false. He agrees with Dr. Marie that there is a diminution of intelligence among aphasics, and affirms that this is due to amnesia, the lobe of memory being impaired. The spiritual life is not lessened, but intelligence has need of sensation. The soul needs the brain to do its work with, and must employ memory. All the psychic lacunæ shown in aphasia are to be explained by the fact that memory is impaired.

By the discovery of Marie, which marks a tremendous progress in the localization of the sensible functions, and with the overthrow of those theories which placed higher intelligence in the frontal areas of the cortex, materialism has been vanquished. "It has lost its last card and its fine theories have now only an historical interest." Yet the materialists will not recognize their defeat. Their fear of the supernatural and their hatred for the divine have made them blind and deaf of their own free will. Only a miracle could convert them. "It would be necessary to materialize the spirit and confound reason itself, to make the soul *palpable* and God visible." These, the closing words of the book, indicate the spirit in which it is written throughout, a spirit which leads to the extravagant praise of the "discoverer of the lobe of memory" and to the slighting reference to David Hartley as "an obscure English sensualist."

S. S. Colvin.

University of Illinois.

Principles of Logic. George Hayward Joyce, S.J. London: Longmans, Green, & Co. 1908. Pp. xx + 431.

This new text-book on the traditional logic has, I am inclined to think, a reason for its existence, even beyond the special public for which it is more directly meant. It is intended as an introduction for beginners in philosophy from the standpoint of neo-scholasticism, as opposed, more especially, to the purely formal conception of logic, to the empiricism of Mill, and to the newer logical tendencies of German idealism. The result is a particularly well-knit piece of work, informed and directed throughout by a distinct and conscious philosophical conception which, whatever one may regard as its adequacy, is at any rate firmly grasped and applied with much logical keenness and vigor. The special point of view comes to light, perhaps as clearly as anywhere, in the emphasis on the scholastic doctrine of "Terms of First and Second Intention." The distinction here involved between the real order and the conceptual order—things as they are mentally represented, and hence as they are subjects, predicates, universal terms, etc.—and the restriction of pure logic to this latter field, is used continually, and, in my judgment, by no means unsuccessfully,

as a help to clarity of thought in a variety of logical matters. On the other hand, by the constant insistence on the relation—defended in his doctrine of moderate realism—of the conceptual to the real world, and on the function of logic as a method always for the attainment of truth about the latter, and not as merely formal, the sense of triviality which hangs about the traditional treatment of logic is, in a measure at least, avoided. As a consequence of the standpoint, the doctrine of the judgment is consistently conceived as the inherence of an attribute in a subject rather than as a relationship of classes, save in the case of a few subordinate logical processes. The distinction between the real and the conceptual orders also is responsible for certain large features in the arrangement. Thus classification is separated from definition and division, and placed in the second part, which, as applied logic, deals with the real order; and similarly, in induction, the discussion of the inductive methods is put in this same section, and separated from the account of the essential inductive process, as the legitimate inference of universal laws from individual cases through a mental recognition of causal relationship, which is made a part of pure logic. One might easily refer to a number of matters of interest in Mr. Joyce's discussion, for example, among others, his treatment of the import of propositions, the canon of syllogistic reasoning, and the chapters on induction, uniformity of nature, and explanation. An attempt at criticism in detail would, however, raise so constantly the question of the general philosophical background that I shall not attempt it here.

As a logical text-book the volume has some decided merits. The definitions are particularly clear cut in both thought and expression, the ambiguities which perplex students are adequately covered, and the discussion of disputed points is marked by directness and common sense. Indeed, as an example of keen, accurate and thorough thinking, the book is admirable, and one rises from it with a new sense of the virtues of the scholastic mind. That one should also feel that it is perhaps a little too definite and finished, that one should get the impression that the universe with which its philosophy leaves us is artificially simplified to fit a rather too precise and over-adequate logical instrument, may also well be the case with some. But this might not necessarily be a bad thing pedagogically. I imagine that the book might be made useful as a general introduction to philosophical questions even in a secular school which repudiated its philosophical standpoint. It is probable that not a few readers will feel that, if this is scholasticism, scholasticism is not altogether what it has been painted, that it is really nearer to our common-sense world of thought and gives less a sense of unreality than some of the more prevalent systems. A treatise like this might at least, I am inclined to think, have the advantage of lessening the danger of that complete loss of bearings which is a not infrequent result of academic attempts to introduce the beginner to philosophy.

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The Psychological Phenomena of Christianity. GEORGE BARTON CUTTEN. New York: Charles Scribner's Sons. 1908. Pp. xviii + 497.

The purpose of this volume is, according to the author, to present a summary of the conclusions of the many recent, but scattered, studies in the psychology of religion. It *is* strictly a summary rather than an original treatise, and it will consequently interest the general reader rather than the psychologist.

The first part of the work is devoted to a description of the relatively pathological or unusual phases of religious phenomena, such as mysticism and its attendant manifestations, glossolalia, visions, dreams, stigmatism, witchcraft, monasticism, asceticism, various religious epidemics, faith cure, miracles, etc., to mention only a portion of the topics treated. The treatment is largely descriptive and contains but little detailed psychological analysis of the states or phenomena.

The latter portion of the book deals with conversion, variations in religion with age and sex, the place and function of the different traditional types of mental process in the religious experience, worship, prayer, religion, sexuality, etc.

The author is to be commended for the large amount of material he has collected from many different sources, as well as for the readable form in which he has cast it. It would hardly be fair to criticize him too severely from a psychological point of view, as he has manifestly written for the general reader rather than for the psychologist. He does not pretend to work out any new point of view nor to carry psychological interpretations farther than they have been carried in the majority of recent works. His psychological interpretations, as far as they go, would, in the main, appeal to psychologists as sane and defendable. He is to be criticized, however, for failing to grasp the real bearings of the psychological problem, and consequently for departing too readily from a scientific point of view. At the very outset, he states as his belief that if God acts directly upon the human mind it must be through the subconscious, and to this supposed possibility he reverts repeatedly. It would take too much space to criticize this assumption as it deserves. We believe, however, that it is impossible for a real psychology of religion to countenance any such hypothesis. Nor can the science of religion accept such concepts as that of the Deity at their face value. Whatever else God may be, for the psychologist he is not an external personality influencing man through some particular phase of his personality. But even if we should grant that God is such an external, personal agent, it is difficult to understand why his direct influence upon man should be consigned to the subliminal regions of mind. A real psychology of religion will not be written except by the student who clearly realizes that the scientific description of mental phenomena, whether religious or otherwise, no more requires the hypothesis of a Deity as a causal element than did La Place in his "Celestial Mechanics."

It is only fair to the author to say that he is conservative and far from dogmatic in his discussions. Thus, in his chapter on immortality,

he does not believe that studies in spiritism have as yet afforded any positive evidence for or against. And yet just here is the whole difficulty. The very assumption that immortality may conceivably be tested by the canons of science is to make a serious methodological confusion. Should we not distinguish between facts of description and those of appreciation? The belief in God and immortality is a symbol of certain values, or meanings, which life has for certain people, and no amount of advance in scientific research can possibly transfer these beliefs from the world of values to that of scientific description.

The discussion of the place of intellect, imagination, knowledge, emotion, and will in religion is based upon the metaphysics of Professor Ladd, and is decidedly philosophy rather than psychology. To one who does not adhere to this philosophy the exposition here offered does not seem to be particularly illuminating or suggestive.

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JOURNALS AND NEW BOOKS

MIND. April, 1909. *Solipsism* (pp. 169–183): F. C. S. SCHILLER. – Purely theoretic philosophy has real difficulty with solipsism. Philosophy which insists that theoretic doctrines must be capable of application to practise has an advantage in this respect. "A solipsism, it will say, which must in practice recognize other minds and makes no practical difference in the solipsist's behavior, does not logically differ from the view it simulates in practice." *Professor Laurie's Natural Realism* (pp. 184–207): J. B. BAILLIE. – A criticism of volume II. of Professor Baillie's "Synthetica." According to Professor Laurie, "The absolute . . . is the ultimate object of our knowledge all along the line of experience." In Professor Laurie's theory, evil finds its possibility in the fact of negation. But negation *per se* is not necessarily evil or source of evil. Evil only appears where negation remains as a constant irremovable factor in the process of individuality. Professor Laurie's arguments must rest finally on his thesis of the unity and continuity of being. Immortality is a case of continuity. *On Certain Objections to Psychology* (pp. 208–230): T. LOVEDAY. – The scientific independence of psychology is not yet recognized. Psychologists are accused not so much of being as of failing to be metaphysicians. Most criticism of psychology is not from the psychological, but from the metaphysical point of view. *Reflective Judgment —The Highwater Mark in the Critical Philosophy* (pp. 231–243): R. A. C. MACMILLAN. – A study of the motives and meaning of Kant's Critique of Judgment. "If it be the case, as Kant suggests, that the original function of the mind is the Spontaneous, if Productive is the condition of Reproductive Imagination . . . then it must lie in the power of this original function to maintain a distinct realm for itself. The sphere where representations rebecome what they have been from the beginning,

viz., creations of feeling, is the sphere of the Æsthetic." *Discussions: Mr. Rashdall's Defence of Personal Idealism* (pp. 244–351): JOHN WATSON. – A reply to Mr. Rashdall's discussion in *Mind* for January. *Mr. Haldane on Hegel's Continuity and Cantorian Philosophy* (pp. 252–254): R. A. P. ROGERS. – A comment on Mr. Haldane's article "The Logical Foundations of Mathematics." Hegel and Dedekind use the term "continuity" in different senses that present comparison. It is wrong to deny epistemological and metaphysical significance to the Cantor-Dedekind conceptions. *Critical Notices:* W. Mitchel, *Structure and Growth of the Mind:* R. F. A. HOERNLE. R. Adamson, *The Development of Greek Philosophy:* J. A. STEWART. J. Royce, *The Philosophy of Loyalty:* J. W. SCOTT. Max Wundt, *Geschichte der Griechischen Ethik:* A. E. TAYLOR. John Burnet, *Early Greek Philosophy:* JOHN I. BEARE. *New Books. Philosophical Periodicals. Notes.*

ARCHIV FÜR SYSTEMATISCHE PHILOSOPHIE. December, 1908. *Naives und wissenschaftliches Weltbild* (pp. 447–496): VITALIS NORSTRÖM. – A careful criticism of Mach and the empiricists who would absorb subject and form into content of knowledge. Logical satisfaction demands as a precondition to a scientific view of the universe an epistemological ego. Further, all views of the universe are relative, and the explanation of nature from personality as the center, is the highest and completest. *Altruismus und Gerechtigkeit* (pp. 497–514): GUSTAV TICHÝ. – Altruism can have no primary place or value in morality: this must be given to egoism on the one hand, as the passive factor; and to right or justice on the other, as the active factor of ethical life. *Über die Formen des Denkens* (pp. 515–530): EMIL RAFF. – The two fundamental forms of thought are intuition and abstraction: the former conditions the conception of space; the latter, the conception of time. The dependency of thought on its own forms prevents any knowledge of the ego. *Prolegomena* (pp. 531–546): GEORG WENDEL. – The philosophical system of the future can not be founded on the mathematical and natural sciences, but must be founded on experience as a whole, of which natural science is only a part. Such a road to philosophy as the sciences furnish could lead only to disaster, for the methods of philosophy and experimental science are very different. *Jahresbericht über die Literatur zur Metaphysik* (pp. 547–566): DAVID KOIGEN. *Die neuesten Erscheinungen auf dem Gebiete der systematischen Philosophie. Systematische Abhandlungen in den Zeitschriften. Eingegangene Bücher.*

REVUE PHILOSOPHIQUE. April, 1909. *La pensée mathématique: son rôle dans l'histoire des idées* (pp. 337–351): G. MILHAUD. – Mathematical thought has always captivated the imagination of philosophers (1) because it presents a spontaneity of impulse, and (2) because knowledge of the physical world is always implied by the use of the symbols it creates. *La philosophie de R. Eucken* (pp. 352–373): J. BENRUBI. An expository study of Eucken's philosophy with a brief account of his career and characteristics as a teacher. *La conscience affective* (pp. 374–399): TH. RIBOT. – The affective consciousness is the consciousness of the

vital energies of the individual. It manifests itself as one of the forces of nature. *Revue Critique. La sociologie de G. Simmel:* G. PALANTE. *Analyses et comptes rendus.* Dwelshauvers, *La synthèse mentale:* FR. PAULHAN. Caird, *Philosophie sociale et religion d'August Comte:* H. ROBET. Sarolea, *Cardinal Newman:* L. ARRÉAT. Revel, *Vers la fraternité des religions:* L. ARRÉAT. Titchener, *Lectures on elementary Psychology of Feeling and Attention:* TH. RIBOT. E. de Cyon, *Das Ohrlabyrinth, als Organ der mathematischen Sinne für Raum und Zeit:* DR. JANELEVITCH. Baumann, *Le cœur humain et les lois de la psychologie positive:* FR. PAULHAN. Aslan, *L'expérience et L'invention en morale:* FR. PAULHAN. J. de Lanessan, *La morale naturelle:* G. L. DUPRAT. Del Vecchio, *Il concetto della natura e il principio del diritto:* DR. JANKELEVITCH. *Revue des périodiques étrangers.*

Garman, Charles Edward. *Letters, Lectures, and Addresses.* Prepared with the cooperation of the Class of 1884 of Amherst College by Eliza Miner Garman. Boston and New York: Houghton Mifflin Company. 1909. Pp. xiii + 616. $3.00 *net.*

Dugage, Henry Roulleaux. *Théorie des principes de l'absolu.* Paris: Libraire Plon. 1909. Pp. 60.

NOTES AND NEWS

THE sixth international congress of psychology will open at Geneva on the third of August and continue until the seventh. The official programme has been issued under date of June 15 and can be had, together with full information about the congress, from the general secretary, Professor Edouard Claparède, Avenue de Champel 11, Geneva.

PROFESSOR GEORGE H. HOWISON has been made professor emeritus of philosophy at the University of California. Mr. George P. Adams has been promoted from instructor to assistant professor of philosophy, and Dr. De Witt Henry Parker (Harvard) has been appointed instructor in philosophy in the same institution.

AT Lehigh University Dr. Percy Hughes (Columbia) has been advanced from assistant professor of philosophy, psychology, and education to professor of philosophy and education and put in charge of the department.

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KNOWLEDGE AND PERCEPTION

To maintain that we accumulate knowledge about a great variety of things that discovery and observation provide us with would seem a thesis sufficiently commonplace. It was the burden, nevertheless, of a recent article which I believed to have a certain pertinence to current perplexities.[1] To say that the subject-matter of knowledge of existence is revealed by perception is only to say that there is a subject-matter about which such knowledge may, under favorable conditions, be accumulated. The purpose of the article referred to was to claim that the subject-matter of existential knowledge must be provided by perception, and that the knowledge relation is one that occurs subsequent to perception, being a relation within what I ventured to call the existential universe of discourse. As the subject-matter of all existential discussion must, if I am right, belong to the class of discovered things, things known and things unknown do not differ from each other in the matter of *percipi*. A thing which has no place in the universe of discourse is not unknown in any logical sense. Accordingly, to treat the problem of defining knowledge as a problem of perception is, to say the least, an abuse of language,[2] for something that we have come upon may be an object of total ignorance. In fact it might be said that we are continually seeking to convert objects of ignorance into objects of knowledge. Before the deciphering of the Rosetta stone, Egyptian hieroglyphics could hardly be called objects of "knowledge" in any reasonable sense; but they are no longer the objects of ignorance that they formerly were: which is to say that they were objects of perception long before they were objects of knowledge. Knowledge of electricity is something which the electrician has got because he knows how certain things in the existential universe of discourse

[1] "The Existential Universe of Discourse," this Journal, Vol. VI., p. 175.

[2] It is not claimed that the stricter usage of the word "knowledge" here advocated will, of itself, solve any problems. The epistemological problem of perception takes for granted the subject matter of empirical knowledge, and has to do with the interpretation of that subject matter. I have already argued that such an effort at interpretation is logically vicious.

affect one another. An object of ignorance would be one, not that we failed to discover, but one which bore no significant relation to any other member of its universe of discourse. Such an object would be an object of perception merely, and thereby, not an object of knowledge because not a term in any cognitive relation.

In the previous article much emphasis was put on distinguishing what I there called the immediacy and the causality aspects of things. I wish now to try to indicate the relation which these two aspects bear to one another. I must resort to the terminology of the preceding discussion.

I

If we replace the formula for sodium chloride by its more analytic equivalent intended to distinguish immediacy and causality we have $I_{Na}C_{Na} + I_{Cl}C_{Cl}$ produce salt. As the formula describes the determinate cooperation of causal factors, it is evident that the sign + connects Na and Cl, not in virtue of their immediacy, but in virtue of their causality. This can be made more evident to the eye by writing the formula as follows:

$$\begin{matrix} I_{Na} \\ C_{Na} \end{matrix} + \begin{matrix} I_{Cl} \\ C_{Cl} \end{matrix} \text{ produce salt.}$$

What now is the relation of I_{Na} to C_{Na}? It must not be forgotten that C_{Na} is not something *überhaupt,* but an instance of a particular causal efficacy operating under determinate conditions. The empirical relation of I to C should be evident to any one who admits that a blind man would not make the best assistant in a laboratory. A mutilated power of perception would interfere with the success of experiments and demonstrations. One who is going to use sulphuric acid must be able to tell that chemical from other chemicals. Salt and sugar resemble each other in one respect but not in another, and trouble has sometimes resulted from omitting the simple test of perception to learn which was which. If a particular immediacy did not serve to identify a particular causality there could be no science of the empirical world where causality was in question. And where the immediacy of one thing is very much like that of another, mistakes are frequent, and sometimes tragic. Immediacy is the sign of causality, but what causality is predicted by a given immediacy must be empirically found out. The chemist is the man who has learned to read a certain group of signs and to take advantage of them. It is a pleasure to acknowledge an obligation to Hobbes. He says: "A mark, therefore, is a *sensible object* which a man erecteth voluntarily to himself, to the end to *remember* thereby somewhat past, when the same object is objected to his sense

again: as men that have passed a rock at sea, set up some mark thereby to remember their former danger and avoid it."[3] So we might say that immediacy is a sensible aspect of a thing which, under the conditions of human experience, operates as a sign of whatever causality has been discovered to go along with it. If immediacy did not "mean" causality there could be no such thing as a science of nature. A critic might, however, reply: "To be sure, the immediacy of a thing is a sign of whatever causality the thing has been discovered to have. It may, however, be the sign of a great deal of causality as yet undiscovered. How can we say that the thing has been tried in all possible combinations?" Such a comment would express a relapse into the very point of view which appears to the present writer logically illegitimate. Undiscovered causality is something not within the existential universe of discourse. Within that universe immediacy has no relation to unobserved causality, for it can have no relation to a term devoid of content. If, then, we recognize that in situations where there is an exercise of causality, things combine to generate results because of their causality characteristics, and that the results are unaffected by the immediacy of the factors, but that immediacy, after experience has learned its lesson, is the sign of what may be expected if certain other familiar cases of immediacy are brought into conjunction, is not the real meaning of Hume's analysis of the causal relation more evident? "No object ever discovers by the qualities which appear to the senses either the causes which produced it or the effects which will arise from it; nor can our reason, unassisted by experience, ever draw an inference concerning real existence and matter of fact."[4] Hume's analysis recognizes that there is nothing about I_{Na} and I_{Cl} to enable us to predict in advance of experience how C_{Na} and C_{Cl} will operate. It will not be maintained, I suppose, that the explosiveness of gunpowder, the adhesive power of cement, the various utility of iron, is identical with the present "appearance" of any of these things. But immediacy, *after experience,* does enable us to tell cement from gunpowder. And that seems to be all that Hume was trying to say about causality.

II

A large part of the capital of "epistemology," indeed its initial motive, has been the supposed difficulty of distinguishing between immediacy and possible illusion. If any case of immediacy can be either hallucination or normal perception, how shall we tell by any *a priori* definition which a given case of immediacy shall be? It is

[3] "Human Nature," chapter V.

[4] "Inquiry," Section IV.

a problem of distinguishing between a real and a counterfeit, and this problem occurs often enough in practical affairs. In the world of flux and method, we test the sign function of immediacy. Dr. Johnson did so when he kicked the stone. The stone was an affair not merely of present sense-qualities, but of consequences to be arrived at in a particular way, and which might be expected by anybody familiar with stones. It is sometimes said that the difference between illusion and fact is that the latter presents us with "existence" while the former does not. Such an illusion is a case of pure immediacy. The fact comprises this same immediacy plus something else called "existence." If the letter E stand for existence, illusion and fact will be represented by I and I + E respectively. What now is the criterion for determining whether or not I is married to E? What are the tests for E? If experience can produce no information out of her store, there can be no test, for there will be no way of knowing what I alone empirically lacks, and hence no possibility of testing for it. What I alone empirically lacks is nothing on the side of immediacy, but it is the causality of which that immediacy is normally a sign. Such a case of illusion is synonymous with causal emptiness. The question, Have we or have we not here a case of existence? is the question, Does the immediacy here observed function as a sign of determinate consequences?

III

The aspects represented by I and C are both genuine aspects of the things that make up the empirical world. That is only to say that the empirical world is characterized by time and process. Metaphysicians have, it is true, not yet ceased to imagine a reality in which the calm of eternal self-identity leaves no place for the genesis of consequences. The theological conception of a changeless divine will survives in the metaphysical notion of a changeless absolute. But in the less exalted regions where empirical verification is possible and where methods are tested by facts, a complex future is generated by a complex present; and it is precisely the relation of present to future which C is intended here to represent. Of course, when the future arrives it will present itself in terms of immediacy, but it will include not merely that, but the conditions out of which its future must be generated, and of which that present immediacy is a sign for those who have learned to read it. Yet if immediacy is never worth appreciating on its own account, there can be no intrinsic values anywhere. Both I and C, present and future, are real aspects of experience and we can be interested in either one by itself. It sounds quite natural to ask, "Do you know

the Sistine Madonna, or the coloring of Turner, or the style of Tennyson?'' The question means, have you a direct and immediate acquaintance with these things? Have you appreciated their immediacy and do you preserve something of the impression? Thus the epistemologist frequently doubts whether you ''know'' the table or the inkstand. He does not doubt for a moment that you know it is a table or an inkstand, *i. e.*, that you know how to apply some of its causality. Such an epistemologist evidently uses the word knowledge in a sense that can not include the knowlege of the engineer, the geologist, the historian, the navigator, or the man of affairs. It is, of course, merely a question of terminology, but it is, in philosophy, worth some trouble to use one word to mean one thing, and when the word knowledge has come to mean two things we should consider which meaning we shall retain. There is no excuse for giving the word knowledge one meaning in science and another in metaphysics. What the imagined epistemologist really questions is not the range of our knowledge, but the authority of our perceptions. The word ''perception'' is a good word. When we mean perception let us say perception. Then we can use the word knowledge consistently to designate such things as the knowledge of the chemist, the physician, and the astronomer.

Those writers who have most systematically cultivated epistemology of the classic type have begun by taking the objective world in the relation of perception, but not in a normal and empirical relation.[5] They have described the world in terms of immediacy and formulated a ''representative'' theory of knowledge. To do so, however, is to leave out of account just the factors which signify the genesis of the future, that is, the factors with which that knowledge that is humanly most important is primarily concerned. Such a description can give no picture of a world in which anybody could do anything, or one thing affect another. To use again the formula

$$\begin{matrix} I_{Na} \\ C_{Na} \end{matrix} + \begin{matrix} I_{Cl} \\ C_{Cl} \end{matrix} \text{ produce salt.}$$

what the ''representative'' theory accomplishes is to eliminate C_{Na} and C_{Cl} as distinct aspects of sodium and chlorine. With them goes the relation of causal cooperation, leaving I_{Na} and I_{Cl} each standing alone by itself. The existence of I_{Na} and I_{Cl} is, of course, synonymous with perception, but the relation which provided the content of the chemist's knowledge has been lost. If we would do justice to the ''representative theory'' we should speak of a representative theory of perception, but not of a representative theory of knowledge. To define the problem of knowledge as the

[5] ''The Existential Universe of Discourse,'' this JOURNAL, p. 181.

problem of a representative, or copying, function in which the mind or consciousness mirrors its objects, is to make the chemistry of carbon irrelevant to the knowledge of carbon, and to forget, apparently, that the knowledge of nature is something to be accumulated, transmitted, and used. Knowledge of nature is skill in reading the signs of nature, and a point of view which is unable to treat immediacy as the sign of causality can provide no basis for a theory of knowledge.

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THE PHENOMENA OF PERIPHERAL VISION AS AFFECTED BY CHROMATIC AND ACHROMATIC ADAPTATION, WITH SPECIAL REFERENCE TO THE AFTER-IMAGE[1]

IN a recent article entitled "On the After-images of Subliminally Colored Stimuli,"[2] Professor Titchener and Mr. Pyle discuss certain after-images reported by Miss Thompson, Miss Gordon, and myself in a series of articles in the *Psychological Review*.[3]

The exact conditions under which these after-images can be obtained, as well as the correlation between them and certain related phenomena, have only recently been worked out by us and the results are as yet not published. It seems unnecessary here to discuss Professor Titchener's article in detail, since his experimental conditions differed sufficiently from ours to explain his failure to verify our results. The main variations occurred in the conditions of achromatic adaptation, in the degree of eccentricity at which the stimuli were exposed, and in the method of projecting the after-image.

One point raised by Professor Titchener, which must be discussed before we go on to our new data, is that of the variability of results at or near the outer color limits.

The method of experimentation employed in all recent zonal determinations is that of exploring the peripheral retina point by point, with a stationary stimulus and fixation and a considerable

[1] Given at the Baltimore meeting of the American Psychological Association, December, 1908.

[2] E. B. Titchener and W. H. Pyle, *Proceedings of the American Philosophical Society*, Vol. XLVII., No. 189, 1908, pp. 366–384.

[3] *Psychological Review*, Vol. XII., 1905, pp. 386–425; Vol. XIV., 1907, pp. 122–167; Vol. XV., 1908, pp. 25–43. A monograph giving a complete statement of our results and conclusions is at present in press. This brief statement is called forth by Professor Titchener's criticism. It should be stated that the conditions referred to were given, to a certain extent, in our earlier papers. See *Psychological Review*, XIV., 1907, pp. 129–130; XV., 1908, pp. 32–33.

interval between stimuli. Professor Titchener criticizes our results, obtained by this method, because they show certain irregularities at the outer color limits. That is, at a given fixation point beyond a given degree of eccentricity, a given stimulus does not give an invariable response.

The results[4] which Professor Titchener uses as negative evidence against us, are a set obtained for him by Professor Baird, of the University of Illinois. A study of Baird's results shows exactly the same sort of irregularity as that found in our results. For example, in the experiment to determine the limits for red with observer *B*, out of three trials with red at 68 degrees, the color was seen once as red, once as orange and once as yellow—yet 68 degrees is taken as the limit for red. Moreover, this same red was seen as yellow from 82 to 74 degrees, as orange from 72 to 70 degrees, and as red at 68 degrees in one series of tests, and in another set of tests with the same observer, was seen as gray from 80 to 70 degrees, as yellowish from 68 to 66 degrees, and as red first at 64 degrees. Thus there is a difference of 14 degrees between the points at which the stimulus is first seen as yellow in the two cases. Since Baird's results, as well as our own, show this irregularity at the outer limits, we venture to suggest that the reactions of the more peripheral portions of the retina are somewhat variable, even under carefully controlled conditions. The question is, however, one that can be settled only by an extended investigation, in which a large number of results are taken with each separate color at each of the various peripheral points. If such a series could be obtained under absolutely constant conditions of chromatic and achromatic adaptation, the results would either be entirely regular—*i. e.*, invariably the same at a given degree of eccentricity—or would, presumably, show variation in one of the two following ways: either the curve representing the number of correct judgments at each peripheral point along a given meridian would fall gradually from the point at which the color was invariably recognized, through the point at which the color was recognized in only 50 per cent. of the total number of tests, to the point at which the color was never recognized, or else the variability would be so irregular that there would be no such thing as an absolutely fixed limit for the color. In the former case the limit would be determined according to the method of liminal values, in the latter case we could only conclude that the retinal functions are variable from time to time at the more peripheral portions of the retina. We hope, in the near future, to be able to obtain a sufficiently large number of readings with a few of the standard colors to settle the question, at least in so far as these colors are concerned.

[4] *Op. cit.*, p. 378.

Professor Titchener has suggested that the after-images which followed unperceived stimuli in our work are due to chromatic adaptation. Our reasons for not accepting this explanation of our results have already been given in an earlier paper.[5] They are, in brief, as follows: Although the brightness and color stimuli were given in irregular order so that the observer had no clue to the nature of the stimulus, the after-image was invariably the characteristic one for the immediately preceding stimulus, and black, white, and gray were never seen as colors or followed by colored after-images. Moreover, all our work has gone to show that the after-images in question are observed under only one particular set of achromatic conditions, to be described in the following paragraphs, although there is an equal chance for chromatic adaptation to be effective throughout the entire investigation.

In general the changes which occur as the color is moved from the center to the periphery of the visual field, have been described as consisting in a tendency on the part of all colors (*Urfarben* excepted) to appear yellow or blue in the outer color zone, hence the designation of this region of the retina as the blue-yellow zone. Most of the observations on which these conclusions are based have been obtained either in the dark room, or a dark or gray background in medium illumination. Our results with the darker backgrounds agree with those already described, but under other conditions of illumination and background we have obtained very different results. Briefly, these results can be described as follows. The limits for all the colors except red and green are narrower when the colors are darkened by contrast with a white background. The most striking results (for the stimulus color) are those which show the effect of induced brightness on the color tone of red, orange, and yellow stimuli. Details can not be given here, but we can describe the situation briefly by saying that it is possible by varying sufficiently the brightness of red, orange, or yellow stimuli, to cause these colors to go through a characteristic series of changes—to wit, each of these colors can be made to appear as either of the others at almost any point on the periphery (from about 60 degrees out), and, under proper achromatic conditions, can be made to appear red at points near the outer color limits. To see orange or yellow as red it is necessary to observe them on a brightly illuminated white background, so that the colors are darkened by contrast with the background. To see red as orange or yellow it is necessary to observe it on a darker background.

Fully as striking a series of changes can be observed by projecting the after-images for blue or blue-green peripheral stimuli on

[5] This JOURNAL, Vol. III., p. 352.

screens of different brightness values. The after-image for either of these colors is yellow on a white screen, yellow or orange on a gray screen, and orange or pure red on a black screen. The red is reported, in all cases as particularly saturated.

Darkening a green stimulus by contrast with a light background, tends to emphasize the green component of the stimulus, though the effect is much less marked than in the case of red, orange, or yellow stimuli. Moreover, pure yellow is seen as red or orange when darkened in this way, rather than as green. The after-images for red, orange, and more especially for violet, show a slightly greater tendency to appear greenish when projected on a dark than on a light background, though with no background was the effect as pronounced as in the case of the after-images for blue and green-blue. Moreover, the after-image for blue, projected on the darker backgrounds, was always red or orange rather than green.

All these results seem to show that particular brightness conditions tend to emphasize particular colors, that all colors except red and green are decreased in saturation and recognized at a lesser degree of eccentricity on a dark than on a light background, but that even red and green (whether stimulus or after-image colors) appear more saturated and are seen at a greater degree of eccentricity when viewed against backgrounds having certain brightness values.

The achromatic conditions have a direct effect on the relative frequency with which after-images follow colored stimuli at the periphery. Peripheral after-images are entirely lacking when the observations are made on a wholly darkened field (*i. e.*, in the dark room), and even in good illumination the percentage of after-images was smaller and their saturation less on the dark than on the light background. Thus there seems to be a definite correlation between achromatic conditions and the after-image. In dark adaptation the after-image is practically absent; as the illumination is increased the percentage of after-images to stimuli gradually increases and the saturation of the after-image becomes more nearly equal to that of the stimulus; finally, on the white background in full illumination, the after-image is almost invariably as saturated as, and in most cases more saturated than, the stimulus. An exception to the latter statement occurs in the case of the blue after-image for orange or yellow, when these two colors are seen as red on the white background. (The red is frequently more saturated than the blue.)

With the eye fully adapted to bright light, after-images were sometimes perceived even when the stimulus color itself was not distinguished. These after-images occurred almost exclusively when the observations were made on a white background in bright illumination. By bright illumination is meant the sort of light obtained.

as in the present experiment, from a large north window on a bright, clear day, in a room with white or gray walls. An essential condition for the after-image is that the campimeter screen be placed near enough to the window to get the full light, and not to be shadowed by the walls of the room. The results are so directly dependent on the illumination that it is necessary to work during the middle part even of bright days. These results seem to be merely another illustration of the correlation between the conditions of achromatic adaptation and the relative saturation and frequency of the after-image. They represent the typical results of one extreme of brightness adaptation, of which the opposite extreme is complete dark adaptation with its practical absence of after-images.

These after-images, which follow unperceived stimuli, occur when the local brightness conditions are such as to emphasize the color of the after-image more than that of the stimulus. For example, with the white background and white projection ground, an unperceived yellow is sometimes followed by a clear blue after-image, while under the same conditions an unperceived blue may give rise to a clear yellow after-image. In both of the cases just mentioned, the stimulus is relatively dark because of brightness contrast with the white background.

Both green and red after-images were obtained by projecting the after-images on the gray or black screen,[6] and so observing them under the local brightness conditions which most favor the perception of red and green.

The two conditions mentioned as necessary for observing these after-images can perhaps be brought together as follows: the white background drowns out the stimulus color by darkening it beyond the point at which it is seen as color: now if the after-image is projected on a screen which emphasizes the after-image color, the result is the perception of the after-image even when the stimulus color is not seen.

The failure of the after-image in dark-adaptation seems to be analogous to the effect produced on a color by darkening it by brightness contrast with a white background. In both cases the color processes are in some way inhibited, so that one part of what seems to be, under other conditions, a reversible reaction, is lacking. With our present knowledge of retinal processes, it seems impossible to decide just how the induced brightness or the brightness of the projection ground affects the color processes. However this may be, all our results point to a direct dependence of color processes on the

[6] For method of projecting the after-image on screens of different brightness values without changing the brightness of the general background, see *Psychological Review*, Vol. 15, pp. 27–29.

conditions of local and general achromatic adaptation, and to this *achromatic* rather than to *chromatic* adaptation as the explanation of this after-image, which Professor Titchener and Mr. Pyle have called the "paradoxical after-image."

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SOCIETIES

NINTH MEETING OF THE WESTERN PHILOSOPHICAL ASSOCIATION

REPORT OF THE SECRETARY

HISTORICALLY the meeting of the Western Philosophical Association in St. Louis, April 9 and 10, under the auspices of Washington University, was of unusual importance. For it was the semi-centennial of philosophy in the west, which claims St. Louis as its cradle. The smallness of the attendance was probably indicative of the Hegelian interest of to-day, as was the enthusiasm of those present an evidence of the permanent claims of Hegel. The numerous lunches and smokers provided by Washington University gave opportunity for more than usual discussion and fellowship among those present.

The announcement of the arrangement for publishing the larger logic of Hegel by the survivors of the St. Louis band formed a fitting testimony to the live character of the Hegelian spirit, and ought to be welcomed by students of philosophy.

The following officers were elected for the subsequent year: Professor Carl E. Seashore, University of Iowa, president; Professor G. A. Tawney, Cincinnati University, vice-president; Professor Bernard C. Ewer, Northwestern University, secretary and treasurer; with Professor A. O. Lovejoy, of the University of Missouri and Professor F. C. Sharp, of the University of Wisconsin, additional members of the executive committee.

The following members were elected: Mr. F. C. Becker, University of Illinois; Professor Bernard C. Ewer, Northwestern University; Professor C. E. Corey, Washington University; Professor Hartley Burr Alexander, University of Nebraska; Professor J. W. Hudson, University of Missouri; Professor Henry W. Wright, Lake Forest University, and Dr. Daniel A. Tear, Chicago. The following recommendations were passed: (1) That non-payment for three years shall automatically cancel membership; (2) that the time of the papers shall be printed in the program and that twenty minutes

shall be the maximum limit unless by vote of the executive committee; (3) that abstracts be submitted to the secretary previous to the meeting at which the paper is to be read; (4) that special sessions be held for the more technical papers in experimental psychology and philosophy respectively and that the president and vice-president represent both philosophy and psychology. The consideration of the standard of admission went over until the next meeting.

To indicate the literary activity as a result of the meetings of the Western Philosophical Association it is only necessary to point to the number of papers which have appeared in various journals from the program of 1908. The symposium on Meaning appeared in the *Psychological Review,* including papers on the "Nature of the Mental Image," by Stephen S. Colvin; "Image and Meaning," W. B. Pillsbury; "Meaning as Adjustment," T. L. Bolton; and "Meaning and Validity," by J. E. Boodin. The following papers have appeared in the JOURNAL OF PHILOSOPHY, PSYCHOLOGY AND SCIENTIFIC METHODS: "Ethical Value," James H. Tufts; "Religious Value," Gerge A. Coe; "Truth Value," A. W. Moore; "The Meaning of $\sqrt{-1}$," Alfred H. Lloyd; "Emphasis in Philosophy," G. R. Dodson; the "Concept of Unity," J. H. Farley; a "Genetic Study of Make-Believe," T. L. Bolton; the "Genetic Way of Defining Philosophy," G. A. Tawney. The paper by F. C. Sharp on the "Problem of Objectivity in Ethics" has appeared in the *Philosophical Review.* Other papers, including the "Philosophical Meaning of Neo-Vitalism," A. H. Daniels; "Esthetic Value," Max Meyer; "Realism and Truth," E. B. McGilvary; "The Intellectual Phases of Esthetic Experience," E. L. Norton—either have appeared in other form or will so appear in the near future.

The abstracts of papers from the last meeting follow:

Evolution and Metaphysics: the Obsolescence of the Eternal: A. O. LOVEJOY.

This paper dealt with the relativity of the eternal and was an argument for the temporal as the real. There are only two types of philosophy possible as regards the temporal—the type which regards the temporal as real and the type which regards the temporal as an illusion. The latter is most consistently stated in the Sankyah system. Bergson may be regarded as a representative of the temporal as real. Hegel, with his eternal system of categories must be regarded as belonging to the type which treats time as an illusion. But can a changing consciousness know the eternal? Even the eternal, from the temporal point of view, as McTaggart has shown, must be looked upon as a future limit or completion of time, assuming of course that the future is better than the past.

Realism and Idealism, a Discussion of Terms: J. E. Boodin.

It was pointed out that realism and idealism could not be properly opposed as metaphysical theories, as realism historically is not necessarily materialistic, but more frequently idealistic or spiritualistic as regards stuff. Again, from the epistemological point of view, it is not possible to oppose realism and idealism. Realism, if it means anything, must mean that the reality which is known is independent, so far as its existence is concerned, of the finite meaning which knows it. But the classic idealistic systems, even that of Berkeley, admit that the finite cognitive meaning does not make the object exist. They are therefore realistic. It was proposed, therefore, that the term idealism should be restricted to its classical metaphysical use as opposed to materialism, while the proper opposite of realism, at least so far as we finites are concerned, is not idealism but solipsism. To this the association agreed, if silence gives consent.

An Interpretation of the St. Louis Philosophical Movement: G. R. Dodson.

Why did a number of men of ability find a gospel in Hegel at a time his philosophy was discredited in the land of its birth? One is a religious reason. There is a deep craving in most men for some view according to which our life can be regarded as something more than "a mere item in a natural world." Any philosophy which even promises this is sure to be welcomed. Hegel was welcomed because he enabled men to think nobly of themselves as united and cooperating with and sharing the life of reality. . . . Another reason was the constitutional yearning for a deductive ideal which some seem to have. This general or pure thought solution of the problems of life the leaders of the St. Louis movement thought they found in the Hegelian dialectic, and they proceeded to its application. . . . But the most important reason for the political and educational success of Hegelianism in the west is the conciliatory character of Hegelianism—its ability to meet opposing interests and reconcile them. In this the temperament and tact of the leaders no doubt played an important part. See this Journal, Vol. VI., pp. 337–345, for the entire text.

The Ethical Significance of the Hegelian Dialectic: Henry W. Wright.

The Hegelian dialectic is essentially a law of spiritual development, illustrated in every complete volition. Its movement is that of self-realization and two views of hedonism and rationalism in ethics have arisen from an undue emphasis of the two extremes, thesis and antithesis, in this movement. The activity of impulse with its present satisfaction constitutes the thesis in self-realization.

The movement to antithesis occurs when this present impulse is denied in favor of some purpose or conception of reason whose fulfillment lies in the future. The final stage of synthesis is reached when the strength of present impulse is converted into a means to the attainment of the larger ends and ideals of reason.

Hegel's Conception of an Introduction to Philosophy: JAY WILLIAM HUDSON.

The "Phenomenology," intended at first by Hegel as an introduction to his system, definitely suggests an efficient way of introducing students to philosophy. Among the definite suggestions are: that, for the beginner, philosophy were better viewed not as a theory about life, but as an attitude toward life; that common sense means real attitudes not alien to philosophy, and so is responsible for maintaining itself; that thus the transition to philosophy is to be depicted as an inner development of these attitudes; that the best way to introduce to the typical philosophies is to depict them as emerging as the successively evolved attitudes of the individual toward his world; that it is these typical attitudes and not the concrete history of philosophies which the introducer is concerned in presenting. Hegel's procedure rightly introduces all philosophies as solutions of problems which have first been actively realized as such by the reader; he thus introduces not so much to a system as to a philosophic mode of mind, through spontaneous thinking; he strikingly and rightly conceives of the relation of an introduction to philosophy to literature and to concrete historic movements. Hegel's embodiment of his conception is hardly successful; but the conception itself is so commendable that a new experiment within the conception is highly worth while. See this JOURNAL, Vol. VI., 345 ff., for the full text of this paper.

Religious Implications of Contemporary Realism: BERNARD C. EWER.

Contemporary realism shows three types, the "new realism," "pragmatic realism" and "natural realism." All profess concern with facts rather than with any interpretation of facts which leaves their appearance somewhat distinct from their reality. The implications of these types for the philosophy of religion are conditioned upon (1) scientific psychology of religion, (2) theoretic provision for modern practical religion, (3) concepts of transcendence and immanence, and (4) continuity with the values of life as uncritically held by the religious mind. The new realism is properly naturalistic. Its highest religious concept is that of a system of moral relations as facts of human nature and society. Religion can not survive merely as poetry, consciously acknowledged as illusory. Pragmatic realism has important implications for religion, but is in danger of degrading

worship to the status of magic. It is, however, ordinarily tinctured with non-pragmatic assumptions. The recent history of the psychotherapeutic movement shows its value and its limitations. Natural realism is historically close to the religious mind, *e. g.*, in affording a theoretic basis for moral dualism, and in recognizing the volitional character of belief. It offers possible lines of progress for the philosophy of religion quite as promising as those of other types of realistic thought.

The Relation of Schiller to Post-Kantian Idealism: EMIL C. WILM.

Schiller's notion of the organization of the rational and the sensuous, the universal and the particular, which has in Schiller a merely psychological and ethical significance, is falsely construed by Hegel into a metaphysical theory of the identity of the ideal and the real. These moments are held in strict separation by Schiller, and Hegel's criticism of Kant, that the latter did not attain an objective formulation of the beautiful because he did not transcend the opposition between subjective thought and objective reality, applies to Schiller as fully as it does to Kant. Schiller, both in his earlier philosophical period and at the height of his speculative activity, never abandoned the presupposition of an extra-mental object, the material of sense experience, and the condition of thought and will.

Some Features of the Social Aspects of Hegelianism: J. H. TUFTS.

Hobhouse charges idealism with being one of the factors in the reaction against democracy. Idealism, especially in its Hegelian form, undoubtedly emphasizes the "universal" aspects of man which emerge in organized society, as over against individual interests and the immediate personal liberties which were emphasized by the older liberalism and what Hobhouse calls the "plain, human, rationalistic way of thinking." It was this very fact which appealed to the founders of the *Journal of Speculative Philosophy* which began publication just after the new emphasis upon national life at the close of the Civil War. Hegel conceived the state largely in legal and military categories. Modern progress in science and education lead us to conceive human unity as mediated more through other agencies. The new industrial, sanitary, social, and educational problems make the function of the expert, rather than the monarch, increasingly important as an agent of the commonwealth. The question how far Hegel had a glimpse of scientific method as a possible method of social progress, and how far he conceived "passion" to be the moving power, not only in past history, but necessarily, is bound up with the whole question of the relation between his logic and his view of history.

The Religious Trend of Hegelianism: W. M. BRYANT.

In Germany a note was long since made to the following effect: The fundamental principle of Hegelianism—namely: that everything tends inherently to go over into and become its own opposite—has been beautifully illustrated in the history of Hegelianism itself. And there seems to be some truth in this. Wherever Hegelomania has died out it appears invariably to have been reborn as—at least there has appeared in place of it—Hegelophobia.

Now the Hegelianism referred to in the present brief paper is—permit me to urge—neither of these. Hegelianism as here intended is, first of all, a philosophic method; which, secondly, involves a very pronounced religious attitude. As method, its immediate presupposition is: that the one thing directly knowable by thought is just thought itself. Along with which is the fundamental conception that in its very nature mind is characterized by spontaneity. And this comports exactly with—is in fact the complement of—the dogma expressed in the laws of motion, namely: that matter as such is absolutely destitute of any and all principle or power of initiative. Not only is it, then, that "Mind governs the world" (as "Old Nous" of Athens used to say); but also that, primarily, mind *is* the "world" and, secondarily, *produces* the "world."

Mind, as self-active, is self-manifesting, self-expressive, self-revealing. Man speaks, and words are; God speaks, and worlds are. And, for our present purpose, the world in space is merely the medium of communication between man as mind and God as mind.

Note now that (as here understood) Hegelianism insists uncompromisingly upon this: That human history is an evolutional process. It is "progress in the consciousness of freedom"—progress, that is, in self-comprehension by man; the progressive discovery on his part that, as mind, his nature is one with the nature of God; progress practically, therefore, is that "imitation of God" which the "Second Founder of Christianity," by one of his characteristic intuitions, recognized as the one really worthy motive of all human effort.

But Hegelianism views the process of human history as merely the culminating aspect of one all-inclusive dialectical movement, any given instance of actual development within which must (ideally) begin with the simplest degree, and proceed with logical consistency through each and every succeeding stage to the ultimate goal for that special type of existence. Meanwhile Hegelianism—a really modest Hegelian (if anywhere there is one) will admit that—Hegelianism itself is but one of the many aspects of the evolution of human consciousness. And, to insist that, in its applications of its own dialectic method within the sphere of human progress, religious or other,

Hegelianism has made no mistakes—that would be in direct contradiction of the fundamental trend of Hegelianism itself—would in fact be nothing less than a manifestation of Hegelomania. Recall in such applications the often criticised insufficient allowance for human caprice—the violent exercise, that is, of undisciplined human freedom—and the consequent forcing of facts, betimes, into the too rigid (or rather, for such purpose, the far too simple) framework of the extremely abstract "Dialectic" as set forth in the Hegelian logic.

Consider the fundamental religious trend, however. On his part, Hegel, in his "Philosophy of Religion," represents the whole course of the development of the religious consciousness of the human race as logically one, the culminating degree of which is found in Christianity. So again F. C. Baur and others—the "Tübingen school"—sought, with all the resources of learning at their disposal, to penetrate to the actual facts of the Christian religion itself and thus to atttain a deeper and worthier comprehension of its actual import.

Discredited no doubt much of that work has long since come to be; but this rather in the details of its learning and in the overemphasis of some of its features than in the validity of its general trend. Renovated, corrected, supplemented through the researches of Pfleiderer and others, this movement has faced steadily in the direction of that "higher criticism" to which we of to-day owe so much in the field of direct historical knowledge of actual religious development.

True, there are those who believe—with more or less of reason—that rigidly verified historical fact is precisely that with which "Hegelianism" is least of all concerned. But the charitable—not to say super-charitable—attitude of present-day philosophers may perhaps be trusted to allow that, along with other "isms," even Hegelianism may sometimes do better things than it has directly intended. I mean, just now, that its deepest intuitions have all along really faced in the direction indicated. Possibly it may not be a serious overstrain of the charitable spirit referred to if it is claimed that those far-reaching intuitions have from the outset been—consciously or unconsciously—actual working factors in the fundamental motive and even in method, leading to the great scientific results already attained in the sphere of religious interpretations.

Repeat now that the world as a rational whole—Heraclitus, you remember, believed it to be so—is by that fact for us an actual revelation. In the latest edition of his psychology Jodl reminds us that "the way of science proceeds from chaos to cosmos." Doubtless we had a suspicion of that before. Nevertheless, it does us no harm to be reminded of it again. In fact, the way of science is the way

of ordered thinking; the way leading from the incoherence of elementary consciousness to the coherence, the (at least relatively) cosmic character of matured consciousness. And, of course, in its larger application this is the way from the naïve habit of mind of primitive man to the self-verifying habit of mind in its present-day maturity. In a word, it is the way of progressive self-adjustment on the part of man as mind to the always perfect method of mind eternal. And, in that sense, we may declare the way of science, as Hegel declared philosophy in general, to be "a perpetual service of God."

Chaos, then, is not some past stage of the universe. It is a past —if only it *is* past—stage of my individual consciousness; and the religious aspect of my individual intellectual life consists in the increasing degree of actual appreciation, along with increasing degree of comprehension, on my part, of the perfect method of the mind eternally manifest in the universe as a whole.

Seize that method and you will seize the eternal "Logic"—the method, that is, of the eternally living *Logos*. Seize any other "method" and you will sooner or later find yourself making use of some evanescent form of illogicality—only to see it presently passing over "into its own opposite."

Of course these conceptions are not to be too specifically labeled. They belong to the history of philosophy. And to indicate this I have mentioned at random names so far apart as Heraclitus and Jodl. What gives its peculiar religious trend to Hegelianism is, to repeat, the thorough-going seriousness with which it holds fast to the absolute reality, the primal, essential spontaneity of mind. That, as it ever insists, is the permanent fact. All else is but passing expression. And here again the difference is, after all, more a matter of emphasis than of originality.

Now this peculiar trend has been, and (however masked) still is, a really vital factor in the working out of a more clearly defined religious consciousness on the part at least of educated people. On the one hand is the permanent truth of religion. On the other is the shifting myth-form. And precisely by emphasizing this distinction the way is prepared for that further advance in religious consciousness by which the shifting myth-form can be given up without loss of conviction as to the essential truths involved in the religious interests of life. In a word—speaking for Hegelianism as I understand it—it is through reasoned insistence upon the veritable, essential reality of the spiritual life that religious conviction is not merely preserved for the educated mind, but also intensified and enriched.

Concerning the actual work in progress to-day within the field of religious history: On the one hand, the searching interpretative and verifying work of Pfleiderer, Wernle, and Harnack—to mention only the most conspicuous names—into the origins and actual first shapings of Christianity. On the other hand, the work of such investigators as Boissier, Frazer, and Rohde, tracing out the elements, forms and processes of that great pagan revival which took place at the same time with the early evolution of Christianity and for a time in fact proved to be its really formidable rival. A marvelously creative age! Throughout the then civilized world a profound religious awakening. Two vast parallel movements, the one Jewish in origin, the other Hellenistic, each deeply influencing the other. It is the reverent spirit of inquiry of the present day that is winnowing the records of that great formative period within the sphere of religious history and is bringing to light the historic facts of which philosophy must once more seek to estimate the deeper values for the religious consciousness. In all which work of research the deeply religious trend of Hegelianism is, directly or indirectly, traceable; as, in the further work of estimating the values of the new results attained in the field of fact, the spirit of the Hegelian dialectic—here happily freed from its stiffly formal aspect—can hardly fail to prove the leading factor—"Hegelian," that is, of course, only in the sense in which the law of gravity is "Newtonian."

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REVIEWS AND ABSTRACTS OF LITERATURE

Is Immortality Desirable? G. Lowes Dickinson. Boston and New York: Houghton Mifflin Company. Pp. 63.

Although the body of this address is devoted to the question stated in the title, the beginning and the end consider instead whether immortality is possible or probable. The variation in subject is not unimportant; for Mr. Dickinson, being preoccupied with the poor sorts of immortality which are empirically plausible, or for which some evidence might be procurable, has not given free rein to his fancy in depicting that sort of immortality which would be desirable. Such an ideal picture, however, if not meant to deceive, would be apt to instruct. It might prove helpful in the solution of the other question, as to the truth of immortality, for it might dissuade us from twisting reality to suit our rash fancies, seeing how far reality actually responded to our rational ideals. As it is, among the most persuasive passages in this discourse are those which disparage immortality of various undesirable or dubious kinds, such as arrested youth, endless old age, perpetual recurrence of an imperfect life, or heaven

on condition that others should be enduring hell. There is, however, a profound will or implicit ideal in us which earthly life can hardly satisfy; and what would render immortality desirable would be the possibility of attaining this ideal in some later life. To this end, Mr. Dickinson continues, it would be perhaps enough that an unconscious moral mechanism should secure an appropriate sequel to all actions, a sort of Karma that should explain our fortunes in the world and preserve our acquisitions. But it would be decidedly better if a conscious, even if partial, memory connected these successive existences, as it does the episodes of our existence here. To deny this, Mr. Dickinson tells us, "does not empty life of all its worth, but it destroys, in my judgment, its most precious element, that which transfigures all the rest; it obliterates the gleam on the snow, the planet in the east; it shuts off the great adventure, the adventure beyond death" (p. 33). Such an immortality being highly desirable, it is very important to know whether it exists or not; and we may hope to discover that it actually does exist, if we encourage and follow earnestly the investigations of the Society for Psychical Research.

This conclusion, after Mr. Dickinson's restrained and exquisite presentation of the other points, will cast a chill upon the reader, as it visibly did upon the audience to which this lecture was originally addressed. The author, with Mr. Schiller, admits sadly that people are not interested in psychical research, nor in the immortality it hopes to discover; and he seems to attribute this general indifference to spiritual sloth, prejudice, and lack of imagination. It may be worth while for me, speaking entirely for myself, to point out some other things that contribute to that feeling.

In the first place, I am not sure that the adepts of psychical research are conspicuous for that "scientific method and critical faculty" which Mr. Dickinson, without a smile, attributes to them. I make no pretensions to be scientific myself; yet I think I see the difference between science and mythology. There are doubtless currents in nature to which supersensitive persons respond; to study them might throw unexpected light on the relation of mind and body, on memory, on intercommunication, and even perhaps, on the nature of time. Yet wireless telegraphy seems to promise more in these directions than psychical research. As the latter is now pursued, it seems to be less interested in bridging phenomena with other phenomena than in attributing them all to a mythical cause. Would it be a proof of scientific method and critical faculty if some one tried to find free-will in the brain, or Apollo in the responses at Delphi? A "spirit" or "person," such as is alleged to send messages from the other world, is a concretion in discourse, a moral or rhetorical entity, a term that may be conveniently used to cover a certain cycle of phenomena, but which, taken in itself, is a word only, and a mere label for our ignorance. A "mind," in another world as in this, is undiscoverable save through its manifestations. Science consists in recording these, and tracing their empirical connections; it would stop, in the case of free-will, at some material break in causality; in the case of Apollo,

at the sun or the priestess or some impressionable ether vibrating between them; and in the case of messages from the dead, at some "astral body" flitting about materially. Mr. Dickinson (p. 53) accuses Professor Münsterberg of being dogmatic and unscientific when he asserts that there can be no sensation in the mind when the body does not operate. The assertion is no doubt dogmatic in form and not qualified by the proviso, which I suppose is understood, that we are speaking of sensations that may be inferred systematically and known from without to exist, and not of such as might exist for themselves in isolation, without a discoverable basis or occasion in nature. The conditions of human knowledge have no authority to limit the possibilities of being; but science can not discover anything which, by definition, is undiscoverable. This insight may be expressed dogmatically, yet it is the essence of a "critical" philosophy. Science can only collect the phenomena upon which imagination, if it likes, may build a mythology.

In the next place, the actual communications of mediums, if we choose to interpret them mythically, suggest an immortality which is distinctly undesirable. It is that same ghostly, dismal, and helpless sort of survival which primitive men have always believed in. It is not so much another life, as a prolonged death-rattle and delirium. It makes us shudder "lest death should be," as Shelley says, "like life and fear, a dark reality." A legitimate inference, however, from this shadowy character of the supposed spirits is that they are really echoes only, not existences collateral with that of living men.

Even supposing, however, that further investigation should make it appear that this survival is genuine and sometimes happy, it by no means follows, as Mr. Dickinson seems to assume, that it is important for us now to ruminate over that future existence, or even to know that it awaits us. A future may be as important as you choose taken in itself, and when it arrives; but foreknowledge of it is important only when useful in modelling that future or in heightening, by anticipation, the value of the present. Such foreknowledge as theosophical prophets have reached, or are likely to reach, does not fulfil these conditions. The question whether one is to marry, and whether that marriage is to be happy, is not unimportant for the individual, and is a matter far more open to calculation and prearrangement than is life in another world; yet what could be more idle, or more illiberal, than to spend one's boyhood pining for wedded bliss and consulting fortune-tellers, on the ground that, unless that happy future were foreknown and secure, football and friendship would lose their "most precious element"? As Mr. Dickinson prefers poetry to reasoning on this subject (and I agree with him), I will quote a few lines from Goethe, who believed himself too good for extinction and thought the spirit might pass through death into a fresh and adventurous existence, like a seed that sleeps through the winter. Yet he says ("Faust," Part II., Act. V., Scene 4):

Nach drüben ist die Aussicht uns verrannt;
Tor, wer dorthin die Augen blinzelud richtet,
Sich über Wolken seinesgleichen dichtet!
Er stehe fest und sehe hier sich um:
Dem Tüchtigen ist diese Welt nicht stumm.
Was braucht er in die Ewigkeit zu schweifen?
Was er erkennt lässt sich ergreifen.
Er wandle so den Erdentag entlang;
Wenn Geister spuken, geh' er seinen Gang.

Furthermore, if retribution is unjust, as the author admits, how can justice be furthered by a man's perpetually inheriting the influence of his past acts and habits? What conduces to justice, I should think, is that, wherever action is likely to have important consequences for others, that fact should be regarded in action; not at all that, some good or evil state being given, it should have had kindred causes, or should have kindred effects. The bonds of such moral fatality, which seem to Mr. Dickinson essential to the preciousness of life, seem to me incompatible with the freedom and intrinsic joy of it. I can not see how the whole of an infinite life should be valuable when every part of it is blighted and oppressed by infinite forgotten guilt and an infinite incalculable responsibility. It is only by ignoring their immortality that those who believe in it are able to live.

On the other hand (and this is my last observation), the ideal I find implied in our instincts, preferences, and hopes is a natural, earthly, and distinctly human ideal. If it seems otherwise sometimes, that is only because it has been crushed by misfortune, in the absence of articulate art, into something utterly vague and wistful. Specify your aspirations, begin to enact them, and you will perceive that they are human and that their fulfilment can come only on earth. At the same time you will perceive that they are not selfish. The precious being which you crave to preserve is essentially an ideal, not expressible save in a flux of existences. Therefore sleep and oblivescence need not destroy it. It dwells in consecutiveness of purpose, unanimity of thought, kinship in happiness; it desires to triumph over death only as memory, heredity, and culture triumph over that mutability which, in material life, is absolutely pervasive and irrevocable. There is no ideal self so private as not to be made up of these public elements. The chimera of a soul which is neither the life of the body, nor a rational object, and yet is both at once, is one of the metaphysical hybrids generated by giving a physical status to a moral entity. Such confusions are prevalent enough and traditional; yet they hardly avail to mislead instinct; and this is the fundamental reason, I imagine, why a mythical immortality, even when believed in, leaves mankind in such invincible apathy. They know it is not what their hearts aspire to; it is not really their good, much less a condition for the excellence of the universe. They are not conceited enough to believe that no one can take their place upon the world's stage to the common advantage. If I were the playwright, I confess I should hope soon to find or produce a better set of characters than any that have yet

appeared. Not a single man or woman has ever existed whom I should wish to engage to play forever, rather than fill my theater from age to age with fresh faces, and new accents of nature. Continual perfection would be my ideal, not individual perpetuity; for such perpetuity, as an ideal, would imply either that perfection was unattainable or that the possible forms of it were exhausted. To the sorts of immortality, accordingly, which on closer inspection disenchant us and prove to be undesirable, I should add the finding of my own person again beyond the grave, together with the persons of all my earthly acquaintance, a prospect which leaves me cold or, rather, freezes me to the marrow. To read in such a sense the ideal of human nature, which after all *is* directed upon the ideal, seems to me far from penetrating and far from sublime.

G. SANTAYANA.

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The Riddle of Personality. H. ADDINGTON BRUCE. New York: Moffat, Yard, and Co. 1908. Pp. xiii + 247.

This book, dedicated to William James and Boris Sidis, is a brief, popular presentation of the achievements of the psycopathologists and the psychical researchers. The author aims to correlate and unify the two sets of investigations in the light of Myers's theory of the subliminal self.

The first chapter is devoted to a sketch of the development of spiritism from the Fox sisters to Mrs. Piper, and to a more interesting account of the work of the early hypnotists—Mesmer, Bertrand, Esdaile, Elliotson ("to whom belongs the distinction of having made mesmerism popular in England as a curative instrument"), and Braid, "who was the first really scientific student of mesmerism."

In the second chapter, the author, after telling of the founding of the Society for Psychical Research, recounts several of the classic cases of multiple personality, and concludes with a short statement of Myers's theory of a subliminal self. As it is this theory, in conjunction with telepathy, which constitutes the author's basis for interpreting "psychic phenomena," it is to be regretted that more pains are not taken to defend it from well-known objections. For example, when considering the objection that the phenomena attributed to a subliminal consciousness may be more simply explained as due to cerebral activities not correlated with any consciousness at all, we find by way of answer only the following: "Satisfactory as this objection may seem to him who makes it, he completely overlooks the fact that it takes no account of the psychical significance of the phenomena involved; that, in other words, while the problem of causation may be quite correctly given a physiological explanation, the deeper problem of why the resultant changes take the particular forms they manifest remains untouched" (p. 49). One is tempted to reply that if the structure of the nervous system is adequate to determine the existence of the phenomena, it is of necessity capable of determining also their special character. Again, in citing alleged cases of telepathy in support of the existence of the subliminal, Mr. Bruce seems not to realize that even if we accept these cases at their face value,

they need indicate no more than an unknown type of physical communication between brain and brain. Finally, supposing the subliminal consciousness to have been proved to exist, there is no reason why it should enjoy immortality; or why it should possess any greater measure of independence in its relation to the total nervous system than that possessed by our normal consciousness in its relation to such portion of the nervous system as may condition it.

Chapter III. deals with the different theories of hypotism and with the therapeutic work of the French psychopathologists.

Chapter IV. contains a sympathetic account of what has been done by Drs. Sidis and Prince, and a criticism of American neurologists for failing to realize the importance of combatting the increase of nervous diseases in America by a more systematic and extensive use of suggestive therapeutics. The present invasion of this field by the clergy might have been plausibly explained as a result of its relative neglect by our physicians.

The remaining chapters and three of the six appendices are, for the most part, taken up with a careful examination of the evidence offered by the Society for Psychical Research in proof of survival of death. The author's conclusion is that immortality is still unproven, and that telepathy is both a necessary and an adequate explanation of the phenomena adduced.

Mr. Bruce's book is well written and very interesting. It may be recommended to all who desire a popular introduction to the subjects of which it treats.

W. P. Montague.

Columbia University.

The Origins of Leadership. Eben Mumford. Chicago. 1909. Pp. 87.

This doctor's dissertation, previously printed as a series of articles in the *American Journal of Sociology* for 1906–1907, studies leadership as a social phenomenon. Its eighty-seven pages can not be accounted a very weighty contribution to the subject. Mr. Mumford quite neglects such previous investigations as those of Herbert Spencer and J. G. Frazer. More than a third of his space is given over to a discussion of leadership "as an innate and acquired modal societary tendency or force," of its relation "to the organized and organizing phases of the social process," and of its aspects from "the genetic point of view." The author's treatment of these difficult themes is well reasoned, but in the present state of sociological analysis certainly premature.

The student will turn with greater satisfaction to the study of the actual conditions of leadership among existing primitive folk. Mr. Mumford has here broken fresh ground in showing how the conditions of life in various hunting groups have influenced the development of personality and authority. This idea is worked out with special reference to Australian and North American tribes. It is to be regretted that the treatment was not more thoroughgoing; the citation of a baker's dozen of anthropological books and articles scarcely affords a very secure

foundation for wide generalizations. Nevertheless, the author has made a useful preliminary study which might easily be expanded into a much-needed monograph on leadership in primitive society.

HUTTON WEBSTER.

UNIVERSITY OF NEBRASKA.

JOURNALS AND NEW BOOKS

ANNALEN DER NATURPHILOSOPHIE. Band VIII., Hefte 1 & 2. *Psychographische Studien. III. Michael Faraday* (pp. 1–52): W. OSTWALD. – An account of Faraday's life, with a description of his more obvious and well-known characteristics, but with little attempt at analysis. *Über das Grundgesetz der neuen und alten Ethik* (pp. 53–57): J. ZMAVC. – The true principle of industrial society, render service equal to service received, is the modern counterpart of Christ's two commandments, Love God, and thy neighbor as thyself. *Das Wesen der Mathematik* (pp. 58–62): J. BAUMANN – A criticism of Voos, who would place mathematics as a theory of numbers on a purely conceptual basis. *Alltäglicher Schnitzer in der praktischen Logik* (pp. 63–81): A. MAYER. – Nine classes of common fallacy well illustrated and analyzed. *Die Motive des Handelns* (pp. 82–94): W. FULDA. – A scheme of twelve fundamental concepts, in four series, each progressing from a condition of mere adjustment through a compromise stage to the condition of culture. *Die Ablehnung der Materialismus-hypothese durch heutige Physik* (pp. 95–130): H. WITTE. – Materialism is defined as the belief that what exists is *"Stoff,"* which maintains or changes its place in space. Biological materialism is reduced to physical, and the latter is shown to be based on a theory of ether, continuous or discontinuous. But an analysis of mechanical theories shows them all to be inconsistent with the existence of ether. *Die Monismusfrage in der Physik* (pp. 131–136): H. WITTE. – The monistic explanation of nature will result not from basing electrodynamics on mechanics, but *vice versa*. *Bemerkungen über Ethik und Pedagogik* (pp. 137–152): O. NAGEL. – Evolutionary energetics harmonized with the ethical position of Christ and Dante; with pedagogical applications. *Das Ende vom Lied* (pp. 153–174): H. LOWY. – The number of possible melodies is finite—about the thirty-third power of ten. But the number of non-melodic compositions possible and probable is not easy to compute. *Persönliche Errinerungen an Hermann Lotze* (pp. 175–182): J. BAUMANN. – *Über Korrelationen von Unterschieden bei Organismen* (pp. 183–199): K. HOFFMANN, JUNR. – An attempt to formulate mathematically the degree of relationship between organisms. *Synthese der Empfindungen* (pp. 200–213): R. SELIGMAN. – The assumption (Mach, Democritus) of separate elements of sensation leads logically to a stupefying subjectivism; subjective feeling and spatial perception alike rise from a basis of touch sensation. *Mathematische Beschreibung chemischer Vorgänge* (pp. 214–265): F. WALD. – An attempt to formulate the

spatial and numerical conditions of all possible chemical phenomena. *Das System der Wissenschaften* (pp. 266–272): W. Ostwald. – The sciences grouped under the fundamental sciences of order, the physical sciences of energy, and the biological sciences of life.

REVUE PHILOSOPHIQUE. May, 1909. *La mémoire affective et l'art* (pp. 449–460): J. M. Baldwin. – Certain points concerning affective memory, its content, genesis, and characteristics, are brought together from the third volume of the author's Genetic Logic. *Vers le positivisme absolu* (pp. 461–479): A. Rey. – Philosophy ought to be nothing but the science of its epoch. Present-day philosophers who strive for a metaphysics apart from science are Preraphaelites in philosophy. *Beauté naturelle et beauté artificielle* (pp. 480–518): Ch. Lalo. – The beautiful is not merely a typical instance of a species. Its esthetic character comes from the activity or technique involved in its creation and nature is only beautiful esthetically in so far as it contains an art. *Observations et discussions. Le retour éternal: Nietzsche et Lange:* A. Fouillée. *Sur la durée des faits psychiques:* G.-L. Duprat. *Analyses et comptes rendus.* H. de Vries, *Espèces et variétés:* Le Dantec. Bieganski, *Medizinische Logik:* Dr. S. Jankelevitch. Newton Scott, *The Genesis of Speech:* B. Bourdon. A. Pick, *Über das Sprachverstandniss:* B. Bourdon. Bühler, *Uber das Sprachverstandniss vom Standpunkt der normale Psychologie:* B. Bourdon. E. de Roberty, *Sociologie de l'action:* G.-L. Duprat. G. de Greef, *Précis de sociologie:* Dr. S. Jankelevitch. P. Lafarque, *Le déterminisme économique de Karl Marx:* Ad. Laudry. E. Picard, *Le droit pur:* J. Lagorgette. L. Duguit, *Le droit sociale, le droit individuel et la transformation de l'état:* I. Lagargette.

Alber. *"De l'illusion: son mécanisme psycho-social."* Avec une préface de Raymond Meunier. Paris: Librairie Bloud & Cie. 1909. Pp. iii + 118. 1 fr. 75.

Croce, Benedetto. *"Logica come Scienza Del Concetto Puro."* Filosofia Dello Spirito II. Bari: Gius Laterza & Figli. 1909. Pp. xxiii + 429.

Jones, Henry. *"Idealism as a Practical Creed."* Being the lectures on philosophy and modern life delivered before the University of Sidney. Glascow: James Maclehose & Sons; New York: The Macmillan Co. 1909. Pp. 299. $2.00 *net.*

Lavrand, Dr. H. *"Rééducation physique et psychique."* Paris: Bloud & Cie. 1909. Pp. iv + 121. 1 fr. 75.

Perry, Ralph Barton. *"The Moral Economy."* New York: Charles Scribner's Sons. 1909. Pp. xvi + 267. $1.25 *net.*

Proceedings of the American Society for Psychical Research. Vol. III.; Part I. July, 1909. New York: American Society for Psychical Research. Pp. 592. $6.00

Titchener, Edward Bradford. *"A Text-Book of Psychology."* New York: The Macmillan Co. 1909. Pp. xvi + 311. $1.30 *net.*

NOTES AND NEWS

THE second decennial celebration of the opening of Clark University will be held at the university, Worcester, Massachusetts, during the week of September 6–11. The university purposes "to emphasize again the ideal of scientific activity to which the university has from the first been devoted," and has invited several distinguished scientists to lecture at the university during this week. Professor E. B. Titchener, of Cornell University; Professor Franz Boas, of Columbia University; Professor H. S. Jennings, of Johns Hopkins University, and Dr. Adolf Meyer, of the New York Pathological Institute, will represent the activity in experimental and comparative psychology in America; while Professor L. William Stern, of the University of Breslau, Managing Director of the Institute of Applied Psychology in Berlin, and Clara Stern, an investigator in the field of individual psychology and the psychology of testimony, will represent the progress in psychology in Germany. The university plans also to hold during this week of the celebration conferences on teaching of the different branches of science. Two of the psychological conferences will consider the teaching of psychology as a professional subject in normal schools and teachers colleges. The consideration will be under the direction of Professor Guy M. Whipple, of Cornell University, and Professor Carl E. Seashore, of the University of Iowa.

THE Sixth International Congress of Psychology will be held at the University of Geneva during the week of August 3–7. In order to facilitate discussion, the committee on organization has arranged a limited number of topics, which are to be introduced by speakers chosen in advance. The following are some of the topics scheduled for discussion: "The Psychology of Religious Phenomena"; speakers: Harold Höffding, of the University of Copenhagen; J. Leuba, of Bryn Mawr College; "Psycho-pedagogical Classification of Backward Students": speakers: Dr. O. Decroly, of Brussels; Professor G. C. Ferrari, of Bologne, Italy; Dr. Th. Heller, of Vienna; Professor L. Witmer, of the University of Pennsylvania; "Tropisms": speakers: Dr. G. Bohn, of the University of Paris; Professor Fr. Darwin, of the University of Cambridge; H. S. Jennings, of Johns Hopkins University, and J. Loeb, of the University of California. American psychology is to be represented in the individual discussions by Professor M. Meyer, of Columbia University; Professor J. Leuba, of Bryn Mawr College; Professor R. M. Ogden, of the University of Tennessee; Professor J. W. Riley, of Vassar College, and Professor R. M. Yerkes, of Harvard University.

A MEETING of the Aristotelian Society was held on June 7. The vice-president, Mr. G. E. Moore, was in the chair. Dr. A. Wolf read a paper on "Natural Realism and Present Tendencies in Philosophy." We quote in part the abstract of the paper given in the *Athenæum* for June 12: "Under the influence of Kant's criticism and Comte's positivism modern science has been drifting towards an exaggerated phenomenalism and an increasing distrust in human knowledge, until the theoretical construc-

tions of science have come to be described by its students as little more than a mirage. In the pragmatist conception of truth we see this tendency seeking an academic epistemology. But this more or less agnostic or sceptical tendency is beginning to arouse dissatisfaction, and there are signs of a forward move toward a new realism. The new movement is not without its excesses. Natural realism, with some little modification, is more defensible than is commonly supposed, and avoids the excesses of phenomenalism on the one hand, and of the new realism on the other."

ANNOUNCEMENT is made of the death of Professor Simon Newcomb, the noted astronomer and mathematician. Professor Newcomb was during his long life of service connected with the United States Navy, as senior professor of mathematics, and as superintendent of the Nautical Almanac Office; with Johns Hopkins University, as professor of mathematics and astronomy; and with Columbia University, as professor of astronomy. He was also instrumental in the preparation of the equipment at the installation of Lick Observatory in California. The list of Professor Newcomb's writings includes not only many astronomical and mathematical treatises, but also books and essays on finance and political economy. One of his latest essays is on the subject of aeronautics. Professor Newcomb was, in 1877, the president of the American Association for the Advancement of Science, and the vice-president of that association from 1883–89. He was also the first president of the American Society for Psychical Research.

FROM June 22 to June 25 Cambridge University celebrated the one-hundredth anniversary of the birth of Charles Darwin. Two hundred and thirty-five universities, academies, and learned bodies sent delegates to the University of Cambridge to represent them in this centenary. Among the delegates upon whom the degree of Doctor of Science was conferred by the University of Cambridge were the following: Harold Höffding, professor of philosophy at Copenhagen, Hugo de Vries, professor of botany at Amsterdam, Charles D. Walcott, secretary of the Smithsonian Institute at Washington, and E. B. Wilson, professor of zoology in Columbia University.

"A TEXT-BOOK of Psychology" by Professor Edward Bradford Titchener, of Cornell University, is announced in the book-notices of this issue of the JOURNAL. Professor Titchener, in the preface of the book, explains the purpose of the present volume. We quote in part his statement there. "The present work has been written to take the place of my 'Outline of Psychology.' This Part I. contains approximately half of the new work; Part II. will appear, I hope, in 1910. In the meantime, the last edition of the 'Outline' will be kept from the market; as soon as the text-book is complete, it will be withdrawn."

DR. E. F. NICHOLS, the president-elect of Dartmouth College, has received from Colgate University the degree of Doctor of Laws. Dr. Nichols has been professor in experimental physics in Columbia University since 1903.

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ON THE EFFICACY OF CONSCIOUSNESS

VIEWING conscious creatures from a purely objective point of view the most general facts which may be observed as surrounding their conscious lives seem to be that they move, grow, nourish, reproduce, and die. Of these phenomena movement is the constant factor and so becomes the one upon which finally reliance is placed as giving evidence of consciousness. The double correlation of Professor Morgan, first, between the individual's own activities and his observed conscious states and, secondly, the inference from others' activities which are like his that their movements are correlated with conscious states, such as he observes in himself, is the mode of procedure here relied upon. Those beings which may be generally allowed to share in consciousness present a graduated series from low to high, or from simple to complex. If, now, comparison is made between the conduct of the creatures which form the extremes of this series, certain facts present themselves. The life activities of the highest are not so narrowly circumscribed. The highest have the widest geographical distribution; they are able to live under the greatest variety of environmental conditions as regards heat and cold, elevation above, and even below, the sea-level, and wetness and dryness of atmosphere. In general terms their habitats are not absolutely fixed by geographical and climatological conditions. Their wider distribution means more adaptability, a greater power to accommodate their activities to outer conditions. They have a higher capacity to make use of extra-bodily materials for clothing, shelter, instruments of offense and defense, and for purposes of transportation. Their reproductive power is very much lower than that of other animals. This, combined with the other features, makes necessary the more ready adjustment to surroundings which they show. The lowest form of adaptation is organic and suitable to the preservation of species and races. Natural selection is the method of racial adaptation, and is adequate to meet the requirements of slowly changing environments. In the development of life, this demand for quick adjustment seems to have been met at first by the plasticity of instincts, but this is still inadequate, for individuals as well as

species must be adapted. In individual adjustment conscious adaptation is required. The first example of this is found in habit formation, but the formation of a habit takes repetition long continued. And then habits become stereotyped and so, when further changes during individual life are necessary after the habit is formed, the habits are as unsuitable as most of those organic adaptations which in case of maladaptation call for the administration of the death sentence. Consciousness in the form of thought or thinking alone could suffice. The steps in its development and the method of operation we will now proceed to set forth.

By comparing the conscious being with the unconscious, or a given organism during conscious activity with the same organism in a state of unconsciousness, certain objective differentiæ of consciousness may be made out. Let one take careful note of the process of passing into sleep or under the influence of ether. There is first a subsidence of activity in general and then the disappearance of tone from the muscles. The latter departs from the most refined muscular groups first and then from the others in the order of their refinement. Waking up or coming to after etherization is marked by a return of tone to the muscles, and sometimes the order of reappearance may be made out to be the reverse of the order of disappearance. Muscle tone is a form of incipient muscular contraction. The motor centers are constantly discharging into their efferent neurones, and the activities of the muscles tend to excite returning currents to the central system. Section of the motor nerve causes a disappearance of tone, and section of the sensorial nerve works its disappearance in a similar manner, but not to the same extent. The sleeping person and the anæsthetized patient show only the minimum of muscular activity—respiration and circulation. The other muscle groups assume positions determined only by the force of gravity and their own elasticity. Professor Ribot makes the sameness in the feeling of self depend upon the constancy of the content in the streams of afferent currents which are always welling up from the bodily organs. Let any change take place in this flow and the sense of self identity is altered. The mechanism underlying muscle tone and bodily equilibrium consists of a motor center with its afferent pathway which is constantly discharging into the muscles, exciting incipient activities in the muscles. These, in turn, stimulate the sensory nerve endings in and about the muscles, and so set sensory currents flowing which reinstate central excitement. This is the circular activity of Professor Baldwin. The strength of this excitement often falls through fatigue and other influences by the law of subtraction of effects until sleep ensues. The rhythmical movements of wild animals in captivity, and the repeated activities of feeble-

minded children, as well as the motor automatisms of normal persons, seem to indicate that the process underlying muscle tone in some organs may rise above the level of the incipient stage. Such movements serve to stoke the cerebral fires when the degree of activity tends to fall too low. The appearance and disappearance of consciousness, however, synchronize pretty closely with beginning of tone and equilibrium and their recession.

Viewing consciousness more narrowly and in the light of the observations which the introspector may make, it appears that consciousness is now of one thing and now of another; it changes ceaselessly in its content. It is constituted of a stream of varied thoughts. The stream may be slow or rapid, deep or shallow, and broad or narrow. The images are sometimes clear, sharp, and distinct, and, again they are dim, vague, and without boundaries. All these words are simply figures of speech drawn from things. Since Professor James issued "The Principles of Psychology," the figure of a flowing stream has prevailed over others, and it sometimes seems to express a literal rather than a figurative truth. It, however, scarcely covers all the aspects of consciousness that present themselves to the observer. Consciousness seems at times to be on the lookout—to be alert. This phase seems to have impressed practical people, for this idea of searching is contained in the word attention which has come to be applied to this as well as the other phases of consciousness here mentioned.

On the objective side what may one observe as the accompanying phenomena in activity? If one "turns his attention" to an object and fixes it with his eyes or holds it in his hands, he finds that his eyes fixate now one point of the object and now another. They do not remain for more than a few seconds upon any given point. If he takes the object in his hands, he fumbles it, presses it, rubs it, and passes his fingers or palm over its various contours. Consider for a moment the experience of watching the figures in a wall paper or holding a bunch of keys in the hands. The various stimulations given by the object arouse different mental images of its parts or associates of the objects as a whole or of its separate parts. Now let us say that the lines and colors of the wall paper seem to suggest that the vertical lines converge. Immediately these lines seem to stand out clearer and examination is made to discover if this convergence is true or illusory. The eyes then fixate a given point and the whole body assumes an attitude which aids the process of visual examination, and so the process of changing fixation begins again immediately. If one slips the keys around his key ring and one of them sticks fast, then the movements of the fingers seem to be so directed as to shut out everything else and increase the efficiency of

the fingers which are now trying to slip the key along. The mental image of the lines and of the obstinate key becomes especially clear and sharp. In all these cases there is a carefully adjusted group of muscles which are about to undertake a work, and all the other muscles of the body assume positions to aid the one group in its work. If one lifts with the hand, the body braces itself that the lift may accomplish most. This may be called the attitude of effort which is correlated with attitudes of attention. The origin of this attitude is found in the instinctive activities of curiosity and of stalking. Manifestly in these are to be found the beginnings of the attitude of attention, but the term "attitude of attention" implies too much. The inference is that the attitude is the outcome of a state of mind. Rather is it a deep instinct in animals and the particular manner in which work is done among men. Some organ of the body is preparing for functional activity; it adjusts itself, and at the same time the general muscular organism joins in the support of the one about to function. Here is unity of action among the organs of the body, which is a general law of bodily activity; and a similar law is found to be true of conscious activity. The two unities are correlated.

Every process of attention is based upon the condition of action and reaction between the brain and some sense organ or group of muscles, which is only a special form of the neuro-muscular process underlying the tone of the muscles. When an object is attended to there are running off in the neuro-muscular mechanism currents of exceptional strength which in one direction come from the object and in the other from the central system. To have an image of the object is to have some sense organ active, setting currents flowing centripetally, and some brain processes of greater strength flowing in the opposite direction. Both must rise above the level of the tonal currents and must be prepotent and persistent. Such currents, both afferent and efferent, were first elicited when serious dealings were had with the object. Several such processes may exist at a given moment, but in different degrees of intensity. Each would involve a different sense organ or motor mechanism. General attention means no more than that the action and reaction are more widely distributed. Consciousness—being awake—is due to this process in a still more general form. To be conscious is to be subject to just such a ping-pong of recurring nervous activities that effect muscle tone on one side and brain discharge on the other. To be conscious of the things around one is to have mingled in the general ebb and flow of neural processes the weakened survival of the currents that were first active when acquaintance was had in the serious dealings with all these things. If there be one thing around us of which we are not aware, there is no trace of the happenings that were awakened

when its acquaintance was first made. The consciousness of an object means that the currents set agoing when it was met are joined as a predominant activity with innumerable other systems. When this one ceases to be predominant another from among the mass assumes the rôle, so that there is a constant shifting from one predominant process to another.

The object which is first only stimulus is constituted,—gets meaning—by the conduct one displays in the presence of the object. The eyes and hands make movements about it, or the object is handled and fumbled before the eyes. The object's presence is accompanied temporally by an image. This is the meaning of the object in one aspect. The image may be present later when the object is not. The view that is gaining some ground through the general influence of physiology and biology—the first with its concept of the reflex arc; and the latter with its theory of the origin of reactions—is that the object is just the thing that invites these reactions, and the reactions find their meaning in the object that evokes them. Every object invites activity, and the activities reconstitute the object. The situation of an object exciting a recurrent afferent flow towards the brain, which in its turn discharges downward into the sense organ, producing the movements for surveying the object, is felt in consciousness as an image. The image present in the absence of the object means that there is a weakened survival of the afferent and efferent currents which were aroused in the actual dealings with the object—when it was perceived. These incipient reactions may often be felt by sensitive persons, especially by those in whom images are most vivid. The meaning of an object is given when the neuro-muscular process that has supported the image passes over into the processes which give the next image. More of meaning will be given when this process survives as a background for several succeeding images, each successive image containing this as a part of itself. The fullest meaning, or images with the fullest meaning attached, are those which seem never quite to disappear. Their neuro-muscular processes are subordinate factors at all times. The meaning is, then, that of mental unity and mind-set.

Consciousness is antecedent to or correlated with some activities, and with some it is not. The traditional division among movements is here into voluntary and involuntary. Another division is that of voluntary and automatic or reflex. Genetic psychology presents a similar distinction by the words, controlled and non-controlled or uncontrolled movements. Voluntary and controlled belong together, and both terms imply the presence of consciousness—of images and ideas. The involuntary, automatic, reflex, and uncontrolled belong together, and as such they are without conscious correlate. Con-

sciousness of an action may precede the action in many different ways. The bare presence of an idea of a movement in the mind may precede and seem to cause the movement. Such a movement is generally voluntary and yet it is scarcely under control. Consciousness of a movement may mean that the movement which is to be executed has been decided upon after deliberation, and a special fiat has been issued that it shall forthwith be made real. The movement may be a part of a plan which is to be carried out, and hence care must be taken that there shall be no miscarriage or defeat of the plan.

When movements are considered objectively—studied with regard to the differences that can be made out among them—it is found that some follow the exciting stimulus closer than others, some repeat themselves with the smallest degree of variability, some show a striking tendency to recur in regular sequence and, when once excited, they unfold themselves in an invariable order and brook no interference, retardation, or delay; they proceed directly to their goals. In contrast with these there are movements that follow their real initiating stimuli at indefinitely long intervals; they repeat themselves with no regularity and with extreme variability. When they begin, they tend to stop, begin again, change direction, are accelerated and retarded, and finally reach their goals only after much hesitation and delay. The first are generally allowed to be reflex and automatic, and the latter are called controlled, attended, or voluntary movements.

Examples of controlled movements are to be found in the attempt to set a fairly heavy weight down upon a table or in seeking to make one's way across a dark room and out of the door. Both of these are cases of making movements in view of a plan which, in the first, is an image of the table with the weight upon it and, in the second, it is an image of the door with oneself passing through. In setting the weight down the movement of the hand is at first slow, perhaps, then more rapid, then retarded, again accelerated, checked, started a third time, and so on until the weight meets the table. In going out of the door one begins by groping with hand or foot. He then takes a step, or perhaps two, and begins to grope again. The method is that of "feeling one's way." As soon as one gets a stimulus of way clear, he plumps right into activity, only to be checked up and to wait for fresh data to be given. The last stage results from tactual stimulations either from the door-knob or from the door-jamb, eliciting random movements by which the body is finally guided through. The method in the first example may be called the method of successive approximations, and it is only a special form of the method of random groping which appears in the second. Professor Woodworth found that voluntary movements were more irregular and slower than auto-

matic, and they were over-appreciated. Attention to movements is found to have similar results upon the movements. In all these cases there is an end or goal to be attained. This amounts to a plan for the movement itself; it is an image of it. With the appearance of the image the movement begins to unfold itself. That arises from the very constitution of the image. The image is inseparable from the movement. As soon as the movements begin, through their kinesthetic consequences they are checked up on the plan to see whether they tally or not. These movements will continue until their results tally exactly with those contained in the image. If there should arise at any time any lack of coincidence between the two, the movement is stopped, a period of random change for the purpose of redirecting the movement ensues, and as soon as they coincide the movement is begun again. This accounts for the interruption, hesitation, and delay. After movements have been gone over a number of times they may unfold themselves in that invariable order that is the mark of the automatic. Movements to be highly serviceable must take on this character. The invoking stimulus must bear a high degree of probability that it is true to the situation, or the first indications of an object's presence must be right if it is to be acted upon automatically. When an attempt is made to carry out a voluntary movement, it is set before the performer as an image or it is charted. When the needle shows a deviation from the chart, the helm is put down and held there until the actual course is the same as that upon the chart. If no image is present, any stimulus to activity will cause the action to proceed directly to its goal without hesitation and delay. When an image appears the movement is checked so that its consequences may be noted.

The fiat is in the nature of a further plan lying back of the plan of the movement. Such a plan calls for the continued recurrence of the other plan in view of the kinesthetic results of actions that are being executed. Each action is a variant of the preceding, and each invites another and another until the image of the action shall have been realized in the motor consequences of one of them. The plan of the fiat is the first plan realized. This bears close resemblances to the process of getting meanings which has been presented.

Voluntary action presents itself in its double aspect as an image of a movement—a chart of activity—and as a series of hesitating, irregular, and rambling movements that are being checked up on the chart with a view to making the results coincide with the chart. Such results are obtained by holding up the chart, so to speak, and checking up the motor outcome of movements which are being carried out through successive approximations and by varied and fumbling activities. This idea of a chart upon which a log is being written is the crucial moment in voluntary action.

Now for the process of learning. It is generally held that consciousness is present during the learning of a movement, whether of the body in general or of the speech organs in particular and, when the movement is acquired, consciousness forthwith deserts it. A careful description of a movement thoroughly learned and the same movement in the process of learning should show the method of the learning process. The movement that is in the process of being learned is rambling, hesitating, uncertain, and varied. It has all the characteristics of the voluntary action. The learning is accomplished by starting the movement, stopping it, and then redirecting until it reaches its goal. In fact the learning proceeds by noting the various stages, and when it is not going according to plan, it is redirected by varying it until the necessary coincidence is found. When it has lost all its hesitation and uncertainty and unfolds itself in rapid and regular sequence, it is learned; it is then automatic.

Learning is of two kinds, of thoughts and of actions. The introspective observer remarks the presence in his stream of thought of new images or fresh and unfamiliar ideas, and the objective observer discovers new kinds of movements or new combinations of movement. Unfamiliar images enter the stream of thought by way of perception and imitation. Imitation may be of two kinds, imitation of another and self-imitation. New movements or new combinations of movement present two varieties; let us call these vicarious acting and conceptual acting. Under the first are included all those forms of acting where the substitution of another for the original exciting stimulus to an action takes place. Most forms of animal learning fall under this head. This is the associative memory of Professor Morgan. In conceptual acting a given object may invite a great variety of movements and a great number of objects may come to elicit one and the same response.

In perception an object is set up before the reagent. It elicits a variety of responses in the organ of sense. If it be the eye that the object appeals to, the eye begins to survey it. Each part of the object is fixated in turn. To fixate means to set up in vigorous form the general conditions of muscle tone and attitude of attention which have been described. The mechanism of muscle tone is set to functioning in some direction with prepotency. The object excites the nerve endings in the sense organ, the afferent nerves excite the central centers, and these discharge downward, provoking movements of adjustment now for one part of the object and now for another. This shuttle-like action maintained for a moment is the condition under which the introspector observes the image. Several presentations of the object give the image the character of a recognition, and later the conditions may be so maintained that the image may be felt when the

object is not present at all. It is then a memory. Further perception or repeated perceptions tend to bring out more and more detail because more of the actual points of the object are fixated. The object is in reality the plan which has been described before, and the sense organ is making movements which are being checked up on it. When the image gets the character of a memory, it may serve as a plan on which the movements may be further carried out. In the imitation of another the same essential conditions obtain. The exciting object is another person who moves arms, facial muscles, or speech organs. This serves as the model. Such a situation provokes random activities. When the activities of the subject coincide with the activities of the object-person as a plan, some other part of the person's movements become the exciting cause. This random movement continues until the activities of the subject fall in with the model set before him. In self-imitation the model is an image internally felt. Out of this as a stimulus random movements and activities proceed, the kinesthetic or other consequences of which are charted alongside of the image as a plan. When these coincide, activity ceases. The coincidence reproduces again the conditions of muscle tone, that is, the image gives rise to actions the felt consequences of which are a reproduction of the image. Self-imitation arises when some association, suggested by words, objects, or movements, throws into juxtaposition the old and familiar images of consciousness in such a way as to form new combinations. Such a situation invites random discharges just as a fresh stimulus would do. This is the field of ordinary thinking; and it may be remarked that ideas are given to random and varied changes just as activities are in spontaneous movements. However the changes may come about, any new combination of images is likely to set up varied activities until the combination is realized in action. The varied changes among ideas may find their rest and satisfaction in coherent systems of ideas. In this case ideas coincide with themselves, one idea serving as a plan for others. Wherever a plan, chart, model, image, or idea appears, it is due to a self-sustaining and self-repeating neuromuscular process of afferent and efferent currents that echo themselves back and forth between the central system and some motor mechanism. In the more complex thought the peripheral end is found in the vocal cords and perhaps in the fingers for writing.

Movement-learning through vicarious functioning is perhaps the largest and most important class of learnings. It plays the chief rôle in animal-training and it is always an important factor in the education of human beings. The mechanism of muscle tones here undergoes a peculiar modification that is of the highest significance. It will best be seen in an example. While chickens are excitedly

eating and searching for food that is scattered before them, let one call out in any manner whatsoever or beat upon a pan or other object. After a few trials the call or beating noise will invite the activities of searching for food. The movements of eating and searching set agoing afferent currents from the muscles and these reinvite the activities of the central centers. At the same time afferent currents due to the sound are coming in from the ear. These associate themselves with the afferent currents from the muscular activities and soon acquire the power of initiating the activities of searching which have been initiated by the searching activities themselves. This process gets further extension in the learning by conceptual acting.

Again resort is had to an example to introduce the subject of conceptual acting. The office boy comes to the gate that has received a new lock since he left the office. He seizes the little pin which, being slid back, draws the bolt. The pin on the new lock is a mere blind. He draws upon it without result. Now he presses it in, pulls it out, pushes it up, down, forward, and back, and still there is no result. He now takes hold of the lock by placing his fingers about it; he presses here and there and runs his fingers along the side. At last one finger hits upon a piece of metal on the under side which, by being pressed upward, draws back the bolt. He feels this movement and he repeats it in an experimental way several times, noting the result (these are the conditions for image forming). The next time he approaches the gate the hand is thrust out with the finger properly crooked to reach the bolt without the former random endeavor. Passing by the features here which have already been pointed out as elements in the learning process, it should be noticed that the movement for drawing the bolt has been represented—an image of it has been built up. The boy presents to himself the lock with the movement associated with it, when the lock is not yet there. The lock is the thing that will awaken this representation through which the movement is called out. The lock has taken on that degree of probability of its ultimate character which renders possible its being treated in an automatic way. The power of representing the thing with its appropriate response is responsible for the speedy adjustment. The power of representing the thing with its appropriate movement is of little value in actual experiences, and it is dispensed with wherever it is possible to do so, as the boy did, by developing an automatic response. But let it be supposed that locks of both these kinds are kept in use and their external appearances and surroundings are the same. Then when one approaches a lock, there is nothing for him to do but to employ this learning process through random endeavor. This means hesitation and delay, but the learning process is not very serviceable in actual situations; its function lies

in preparing for them beforehand. If the two locks are known—have been represented and acted upon in the represented plan—the individual coming to it may think of it as belonging to one of the two types—the lock is conceived as this—and then he acts suitably upon it as such. If now the lock experienced does not tally with the lock as conceived, he may conceive it in the other form and then act upon that in the manner suited to it. One may see that this is the same as the process of checking movements up on a chart. The example of the boy learning the combination of the new lock may be treated in this wise. When the boy saw the lock, he set it before himself as of one kind and acted appropriately to such a lock and awaited the outcome. When the lock did not work, he set it before himself as of another kind and acted appropriately to that. He continued in this way until he conceived it in the right way and so found the movement that opened it. The method here is that of random thinking—thinking in succession the various kinds of locks that are known. Both methods—random acting and random thinking—are employed in such cases, and it is not entirely clear which he may have used. However, as it is probable that both animals and young children make use of the method of random acting, the boy has employed it here. The other, however, is the method employed in most scientific investigations. Objects that are met with are conceived first in one way and then in another, and the movements appropriate to each are carried out in succession until one is found that will fit the case. But investigation can proceed in the opposite way. A given concept may be taken and search begun for objects that can be conceived in the manner of the concept. Both methods are only other ways of stating the last of the two named characteristics of controlled movements—a variety of movements can be made upon one and the same object, and a variety of objects can be acted upon in one and the same way. Both processes are accomplished through the power first to represent objects by images when they are actually present, and then to represent them when they are absent and to execute movements appropriate to them as so represented.

Just one more point, and that concerns a direct introspective analysis of the particular moment of thought or consciousness. The description given by Professor James of the empirical thought process is still so complete and adequate in most respects that little more need be done than to reproduce it to satisfy the purposes in hand. The empirical mind presents to the introspective observer a succession of thoughts in ceaseless flight one before the other. Each thought as it presents itself thinks and in thinking feels itself the same with the thought that has just gone before. Having

thought and thereby having been thought, the thought takes its place beside the other thoughts as belonging with them. Each thought thus changes right here from a thinker to a thought, from a representing to a represented thing. Just in the moment of thinking the thought splits into a thought that is object and a thought that thinks and represents. This division into a representing and a represented process is the particular differentia that runs throughout all of mind's operations. The thinker can then be with an object or represent it to himself in its absence. When a reality can appear both to be and to be represented at the same moment, when a thinking being can be with a thing and be away from it at the same moment, this must be looked upon as a variation of a biological sort that confers upon the possessor an advantage of such transcendent importance and value as to place all other creatures out of the running with him. The animals that took on these changes beat the others and have come to possess the earth through just these means, and the world is rapidly passing into the hands of those who have the highest degree of facility in representing things that are not present to them at all. In this very fact is displayed the chief characteristic of mind; it is the power to represent things that are not present and to act upon them just as if they were. In that way the animal organism may learn to act with perfect automatism upon things in their absence, so that when it is necessary to deal with them seriously the appropriate act is there. The preparation has been made beforehand, and this is the peculiar efficacy of consciousness. The steps by which this has been attained are the shuttle-like activity of the afferent and efferent currents in maintaining muscle tone, the heightened intensity of these in the attitudes of attention, their steady maintenance in the formation of the image, the indendent upholding of this image while the motor results of movements are checked up on it, the image as a chart by which activities are directed, stopped, and redirected, the image as a further plan upon which other images are charted in the resolved acts, and the image as a representation or conception by which various actions are carried out in succession. Images, ideas, thoughts, and representations are the individual elements of consciousness which may be observed and classified by the introspector of his own consciousness. The objective observer may note various activities and changes of movement, and the two observers may correlate these movements and the forms of consciousness. The various forms of movement and the changes taking place in them are due to the mode of operation in the mechanism just reviewed. Movements that are correlated with consciousness differ in characteristic ways from movements that are not so correlated.

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THE DILEMMA OF THE INTELLECTUALIST THEORY OF TRUTH

IS the intellectualist in his theory of truth an anarchistic subjectivist? Considerably to my own surprise, reflection has convinced me that he usually is. He insists that truth is a property of ideas (the term is used to include judgments, beliefs, all mental functions having cognitional value) *antecedent* to any process of verification; he insists that this antecedent self-possessed, self-contained property determines the working of an idea, or its verification. It follows that truths come into existence (arise or first subsist) when certain ideas are entertained. Until Columbus (or somebody else) entertained the idea that the world was round, the truth (being a self-contained property of the idea) that the world was round was non-existent. When the idea that the value of π is 3.1415926 arose in some one's mind, *this* truth was then and there created, and so on.[1] Such is the logical implication of this "antecedent property" theory. Note, further, the accidental and arbitrary way in which ideas arise, if truth is an independent property of them. They just happen. For the intellectualist can not deny that a large share of the ideas of men possess an antecedent property of falsity rather than of truth. If these properties of truth and falsity are ultimate, self-contained, and unique properties; if an idea is as likely to have one kind of property as the other; and if there is nothing in an idea which reveals upon bare inspection which of the two kinds of property is possessed, surely the intellectualist is committed to a belief in the thoroughly atomistic nature of truths.

A reply which the intellectualist might presumably make to these statements will be found only to enforce them. The reply is that the intellectualist holds that the self-contained truth-property of ideas consists in their relation of agreement or correspondence to things. Precisely: he makes the relation of agreement with things which constitutes truth a self-contained property of ideas. It is this very fact which commits him to the baldest kind of psychical idea-ism —not to dignify it with the title of idealism. If there were anything in the so-called cognitive self-transcendency of ideas which concretely lighted upon their intended objects so that their truth or falsity was self-luminous, the appeal of the intellectualist to "agreement with reality" would have some bearing; but since such phosphorescence is notoriously lacking, this so-called "self-transcendency" is obviously, after all, only an internal property of an idea *qua* idea.

I shall, however, be properly reminded that not all intellectualists

[1] I do not raise the question whether truths cease to exist when their ideas vanish, though this would seem also to follow.

make truth a property of ideas. Some make it a property of things, events, objects. That Columbus discovered America, that water is H_2O, are truths independent of *any* ideas. Well then, is not *this* type of intellectualism committed to absolutistic rationalism? If things, events, are properly called truths, then the universe must be conceived as a truth-system, *i. e.*, a system of relations of reason, or as "objective thought." The frantic disclaimers of many contemporary anti-pragmatists of sympathy with the Hegelian theory of truth (or that of Bradley or Royce) seem rather amusing. What escape from sophistic subjectivism have they except this theory? The other day I ran across the following quotation from Bossuet in Janet's Final Causes: "If I now ask where and in what subject these truths subsist, eternal and immutable as they are, I am obliged to own a being wherein truth eternally subsists and is always understood; and this being must be the truth itself, and must be all truth; and from it is derived the truth in all that is."[2] Why not, if truths exist *per se* in the order of nature?

[2] English translation, page 395.

The non-pragmatist, if logical, thus appears as either a pure subjectivist or as an objective absolutist. Usually he is not logical, but oscillates at will between the two positions, using one at need to cover up the weakness of the other.

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DISCUSSION

A FEW WORDS IN REPLY TO PROFESSOR MOORE'S CRITICISM OF "ANTI-PRAGMATISME"

THE interesting discussion of my "Anti-Pragmatisme" by Professor Moore in the issue of this JOURNAL for May 27 calls for a few words in reply.

That the ideas expressed in the work under consideration should not meet with the entire approval of pragmatists was to be expected; and that a critic should not present the author's views just as the latter would have done himself—there is nothing strange in that. This is human nature, and we all have our share of it. I may be justified, however, in asking to be allowed to correct just *one* false impression conveyed to the reader of Mr. Moore's criticism who would not be acquainted with the book itself. Mr. Moore gives it as my claim that: "Intellectualism is to save us from the 'consequences' of pragmatism—especially the American brand of pragmatism—which are: a crass materialism, a characteristic 'opportunism,' and philistinism in general, in which all moral control breaks down and

which is to aid in 'humanity cutting off its own head.' " I never spoke of "crass materialism"; neither do I believe that pragmatism, as a philosophy, is responsible for those things Mr. Moore has in mind, if they exist. Far from saying that they would be consequences of pragmatic philosophy, I said that pragmatic philosophy would save us from them when they threaten us.[1] I said that, because it is a philosophy which takes into consideration moral consequences, while philosophy—intellectualistic philosophy—aims at truth for the sake of truth only, pragmatism was useful: and I said further that, as, after all, life is more important to us than scientific thought, pragmatism ought to triumph, and probably will triumph, "not because it is true, but because it is false," *i. e.,* because scientific truth is sad: if humanity is happier when philosophers conceal truth from their fellow men, then philosophers ought to try to keep truth for themselves and not spread it abroad. What I reproach pragmatists for (and the reason why I call my book "Anti-pragmatisme") is that they try to persuade us that scientific theories agree with pragmatic or useful theories; they take usefulness not only in the logical sense, but also in the social or moral sense, thereby creating a confusion between philosophy and moral philosophy. Thus *against pragmatism I do not protest, but only against pragmatic philosophers.*

Now, in maintaining that truth regarding moral or social life is sad, am I saying something so surprising? I think not; for, is not, for instance, Christianity, which is the religion and belief of the best part of humanity, based on that very idea: truth is discouraging, and it is from the outside, from religious revelation alone that comfort can be brought unto us? So I may be "naïve," but I am at least in good Christian company.

"What a beautiful *reductio ad absurdum* of pure thought," exclaims my critic. No, not of pure thought, but of the gratuitous assumption, shared by pragmatists, that *truth* must necessarily be *good.* It is certainly good—I would rather say useful—to know truth, even if it is bad, so that we may parry its effects; but it remains bad in essence, anyway. It is good that a physician should know that a patient has appendicitis and not pneumonia, for the sake of the treatment of the illness; but it does not mean that any of the diseases is good in itself.

I am very sincerely sorry that I have been so misunderstood by a philosopher like Professor Moore. Such muck-raking criticism of

[1] I even did more: on pages 70–71 I warned myself against those who accused pragmatism of favoring " particulièrement les appétits grossiers." And I wrote: "Nous sommes bien certains qu'avec James le pragmatisme n'aura jamais que de hautes et généreuses visées."

modern society as he finds in my book I abhor as unworthy of a philosopher, who has to understand, not to judge. I had thought, from many accounts elsewhere, that I had succeeded in making myself clear;[2] I had also hoped that some sentences like the following, interspersed, on purpose, all through the book, would protect me against this interpretation, at least with those who, like Professor Moore, surely were not intending to write a sensational article:

"Nous ne reprochons nullement à la société d'être pragmatique c'est à dire de veiller à ses intérêts; nous trouvons cela parfaitement légitime au contraire, et du reste le mot "intérêts" peut être pris dans le sens le plus large et si l'on veut le plus élevê. Mais nous reprochons à une école de philosophes modernes de vouloir forcer, pour ainsi dire, la philosophie impersonnelle, la science amorale, la nature indifférente à parler le même langage que nos aspirations et nos passions,—et, même, nous le voulons bien, que nos généreuses *aspirations, que nos* nobles *passions"* . . . (pp. 3–4).

Or again: *"Nous sommes en parfaite sympathie avec l'œuvre sociale que se propose le pragmatisme—qui est en somme de rendre l'humanite aussi heureuse que possible—mais nous ne croyons pas que les moyens adoptes . . . soient les seuls possibles, ou même les meilleurs"* . . . (p. 239).[3]

With regard to "bossism," I agree that there are two explanations possible; either it is a natural and unavoidable product of our modern conception of democracy (which is not the *only* conception, by the way), as I maintain in my book; or it is, to use the picturesque expression of Professor Moore, a case of "social appendicitis" which can be operated upon. The question is: which one of the two explanations is correct? Professor Moore has not shown that mine was not.

Regarding "intellectualism" from the logical point of view, "many will fail to find anything new in support of it." In this Mr. Moore is right; nothing new need be said. My position is simply that pragmatism as an epistemological theory has obscured the philosophical sky, and that a wind of old intellectualism, which means nothing more than plain reasoning, should blow off the clouds. Yes, honestly, I think the "law of contradiction" is a good enough test, and

[2] Just as I write this the June number of *Current Literature* reaches me with an article on "Anti-Pragmatisme." Once more an author, though not taking my side, has seen and stated with perfect fairness my point of view.

[3] I know that some pragmatists protest against such "pragmatic" tendencies of their philosophy. That this is, however, if not consciously, at least unconsciously, the origin of this movement among philosophers, I have tried to show in my book. Whether I have succeeded or not, is immaterial for the point under discussion, which is: Have I, or have I not, accused pragmatism of breeding "crass materialism," and so forth?

I blame pragmatists chiefly for ignoring it. Now, we all know that some of them say they do not ignore it; and those who admit that they do, are considered "undesirable citizens in the realm of pragmatism" by the others. It is, therefore, a very delicate point; the fact is that when you accuse them of doing it they protest vigorously; but as soon as they are not watched, especially when they attack intellectualism, they advocate it in provoking fashion. I can not see anything except a violation of the principle of contradiction in this sentence of an article which I find in the same issue of the JOURNAL in which appears Professor Moore's criticism of my book; it is signed Helen Thompson Wooley: "Nor is it a damning admission to the pragmatist to agree that a given content of thought may be truth under one set of circumstances and falsehood under another, because for him truth is never inherent in the content of an idea, but always in its function" (p. 301). Do not pass, at your convenience, from the logical to the psychological domain—if you do it, this is enough for me to condemn your philosophy.

As to the "lack of anything like an adequate appreciation of the real issue," I will not discuss it; and this is my reason for it: if we believe pragmatists, not one yet except those who belong to the guild, has been able to understand them. No one criticising them has yet escaped this summary judgment—"You do not see the point;" but they keep on refusing to tell where exactly they are misunderstood. This they have been told over and over again; but Professor Moore once more adopts this very easy policy: "Into the issue itself we can not go."[4] Why not? When will those who have conscientiously tried to understand—and they are many—ever find light on pragmatism, if the adepts will not tell them? All Professor Moore consents to say is this: "For him [me] if logic and ethics are different, they must be independent, or even 'opposed.'" Yes! certainly, if you remain consistently in the domain of epistemology. The whole first part of my book endeavors to prove that, especially against Professor Dewey. There are not two logics, one for ethics and one for other departments of science. I am perfectly ready to let the independent reader decide between Professor Dewey and myself. *But* if this *is* the "point at issue"—as the quoted sentence seems to imply—I really do not see how Professor Moore can tell that I did not appreciate it. I discussed it, although perhaps not in the spirit of pragmatism, for almost 100 pages.

Just one word more: Professor Moore points out two passages where, according to him, I have misinterpreted Professor Dewey's

[4] Cf. Professor Dewey speaking of the chapter of "Anti-Pragmatisme" concerning him: "A becoming modesty forbids my dealing with it" . . ., in the *Philosophical Review*, July, 1909.

essay. I went over the difficult texts of Mr. Dewey again, and it seems to me that I understand them exactly. In the first one (pp. 293–4 of the criticism) I understand, just like Professor Moore, that *psychology* can not give us the moral ideal. Perhaps my critic was led astray by the French sentence where the negation in the second part of the sentence is not repeated; he translates: "The content of the moral ideal, *and that therefore.*" In the article published in English I had written myself, *nor therefore. . . .*[5] My second misinterpretation, according to Professor Moore, is that I substitute the word "judgment" for "character" to "make a case of contradiction." I do not see that it makes a difference, as judgment (and this is just the originality of pragmatism at this point) is a mere "expression of the character"—so if the character becomes logical, it would seem that the judgment would become so too.

Those are the only two passages where Professor Moore points out with precision that, according to him I did not do justice to Professor Dewey. Of course he picked out the worst . . . so I do not think that, after all, my criticism is of only a "captious" character.

With the above reservation, I express my thanks to Professor Moore for his criticism.

ALBERT SCHINZ.

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REVIEWS AND ABSTRACTS OF LITERATURE

Has the Psychological Laboratory Proved Helpful? LORENZO MICHELANGELO BILLIA. *The Monist,* July, 1909. Pp. 351–366.

Under the above title Lydia G. Robinson has translated for the July issue of *The Monist* an address delivered by Professor Billia, of the University of Turin, before the International Congress of Philosophy at Heidelberg, on September 4, 1908. Professor Billia remarks, at the opening of his address, that many people will find in the statement of his question a negative reply, but adds that his intention is "to put a question without giving the answer, to state a problem without solving it." Yet we read, toward the conclusion of the address: "Even in simple negligence, even in that eagerness which has made of psychology a research into conditions and effects without consideration of endeavor and liberty, one may say that in spite of all its good intentions, the psychological laboratory destroys psychology and also ethics." This statement, which laboratory workers will read with amusement or surprise, but hardly with chagrin, does not warrant, in Professor Billia's opinion, the conclusion that the laboratory should be suppressed and its doors closed. "Not at all. I have said that I would state questions and not that I would draw conclusions. I would only make a proposition. It is not necessary to suppress anything or to close anything. It is necessary to

[5] This JOURNAL, Vol. V., p. 624.

uplift. Let us raise the standard of the laboratory. First of all it must become truthful. It can do so by dispensing with a name which is a contradiction. Psychology does not operate in a laboratory. The true laboratory of psychology is nothing but consciousness." The reader, however, who draws conclusions from what he reads, will naturally infer that laboratories should be closed if psychology does not operate in them.

There are three considerations which Professor Billia urges upon one who would estimate the laboratory's usefulness. The first of these is that psychology is destroyed by the psychological laboratory because the attempt is made in the laboratory to study the facts of consciousness outside of consciousness. In other words, the study of the conditions under which mental operations are performed tends to obscure the vision of what these operations are, while, as Professor Billia appears to believe, it is the particular office of psychology to exhibit these operations in their essential nature.

In the second place, the attempt to measure mental capacity or operations disregards the fact that other circumstances than those involved in the measurement may operate in a manner to destroy the value of the results attained. In illustration of this point, Professor Billia cites attempts to determine the limits of mental efficiency. He finds these attempts robbed of value by the fact that persons whose capacity appears exhausted are often aroused to extraordinary activity by some emergency which demands immediate action. In other words, reserve force, which he takes to be the important factor in mental capacity, can not be measured.

"Finally, the psychological laboratory leads us to treat mental facts as external objects of experimental research and curiosity. But mental facts are not that. The mind which we observe is nothing else than we ourselves who live and ought to exist in a certain manner." In this connection the familiar point is urged that observation of the facts of mental life does not leave the facts as they were before, and that psychology is thereby distinguished from all other sciences. "Nothing can be observed with regard to the self unless it be the self or a part of the self." The objective treatment of mental facts is, therefore, regarded as the destruction of psychology.

These considerations merit attention, not indeed because they afford a proper setting for the question, "Has the psychological laboratory proved helpful?" but because they appear to point to a fundamental misconception of scientific method. The laboratory worker may justly demand of Professor Billia that the work of the laboratory be judged by its actual results and not by contrasting its methods with a conception of psychology it does not entertain. He may go further and insist that laboratories exist just in order to study the facts of mental life in the ways to which Professor Billia objects. But it is the misconception of scientific method to which it seems worth while to call particular attention. Who, for instance, would censure the astronomer for obscuring the vision of the heavens because he used mathematical physics in the study of them? Who would censure the chemist because in his laboratory he isolates factors which in nature always appear bound up with very complex phe-

nomena, and the operations of which may there be modified by unexpected influences? And, finally, where is the scientist who would seriously claim that the facts he observes are not by his observation and experimentation subjected to conditions different from those in which they naturally occur? Did he so claim, of what merit would be his experimenting? It would, therefore, appear that Professor Billia has brought in his three considerations an indictment not only against laboratory psychology, but also against laboratory methods generally. The aim of scientific method is to discover what the facts of nature will disclose when subjected to conditions of controlled experimentation. It is that which gives to experimental science its great power, which makes it a remarkable human achievement, and which places its results, measured by the standard of usefulness, so far in advance of the mere description of nature however beautiful and however suggestive.

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Aus der Werkstatt der Experimentellen Psychologie und Pädagogik. Herausgegeben von RUDOLPH SCHULZE. Mit besonderer Berücksichtigung der Methoden und Apparate. Nebst zwei Anhängen: I. Ein Neues Chronoscope. II. Instrumentarium für Seminare. Zum Selbststudium und zur Belebung des Psychologischen Unterrichts an Seminaren und andern höheren Unterrichtsanstalten. Mit 314 Abbildungen. Leipzig: R. Voigtländers Verlag. 1909. Pp. 292.

The author has stated the purpose and character of his book in the title. It consists of a description of the methods and apparatus of the modern psychological and pedagogical laboratory, and is intended for use in normal schools and for general reading by teachers and others who are interested in the methods of the newer psychology. It does not, therefore, pretend to be original in its material, but rather in the form of its presentation and in the scope of its contents. The form is determined by the character of the audience to which it is addressed, and the book is, therefore, written in a simple style and does not presuppose a knowledge of even the most elementary laboratory apparatus. It is, moreover, profusely illustrated so that the reader can get as clear and accurate an idea of the apparatus as is possible without direct contact with it.

The scope of the book may be indicated by the statement that it includes not only the ordinary methods of the psychological laboratory as well as certain others which are distinctly pedagogical in their character, but also an elementary presentation of the classical methods in the narrower sense of the term—the method of errors, etc. Furthermore, the author gives at the end an explanation of the mathematical procedure by which the amount of correlation between different mental processes is determined.

It is, of course, a necessary consequence of such breadth of scope and of the numerous illustrations—many of them full-page—that the treatment must be brief. The author often contents himself with merely an indication of the various methods by which a given subject may be in-

vestigated, with perhaps a statement as to which is best suited for pedagogical experiments and a very brief indication of the results which have been obtained. The reader obtains, so to speak, a bird's-eye view of the field of laboratory investigation with emphasis on the methods rather than on the results.

It has been said that a knowledge of psychological apparatus is not assumed. This is true. But a knowledge of the fundamental principles of psychology, while not explicitly assumed, is necessary for the appreciation of the significance of the methods described. The book is suited, therefore, to serve as a companion to a general psychology, but not as an introduction to the science. For his psychology the author holds, point for point, to Wundt's classification and treatment (as he himself clearly states), omitting only certain sections with which no experimental methods are directly connected. On the pedagogical side the author relies on Meumann's recent "Vorlesungen zur Einführung in die Experimentelle Pädagogik." He also draws, however, from a large body of special literature and has brought together a compilation from a very wide field.

The American reader will find himself unfamiliar with much of this literature, since it exists in German school and pedagogical periodicals. As an example may be cited a review of some work which the author himself published in *Neue Bahnen*. This work consisted in a study of the expressions assumed by children when looking at pictures which have various kinds of emotional effect. These expressions he calls "mimicry." The method was to choose twelve pictures, let a class of children look at them, and photograph them during the contemplation. These photographs were then laid before three "referees" whose task was, first, to describe the emotions expressed and, secondly, to choose the picture to which each emotion corresponded. The success of the referees was very striking.

The whole book is written in a most clear and vivid style, and with a skill in presentation which gives evidence of the author's experience and ability as a teacher.

In a supplement is described a new chronoscope of the author's own device. This was constructed for the purpose of overcoming the difficulties which attend the use of the Hipp chronoscope. These difficulties arise from two sources. First, the current must be of just the proper strength so that the pull of the magnet throws the clutch in with the same rapidity as the rapidity with which the spring throws it out. Secondly, the current must not pass through the magnet in one direction for more than a short length of time; otherwise the magnet will become permanent.

Schulze's chronoscope overcomes the first of these difficulties by employing the electromagnet for throwing the clutch both in and out. Thus it is only necessary to keep the current constant in order to produce the same speed of action in the successive cases. The second difficulty is overcome by employing an induction current instead of a direct current. Since the induction current is only a momentary current set up by opening or closing the primary circuit, it is impossible to set up a continuous current in the coils which operate the clutch. And since a "make" of the primary circuit must always be alternated by a "break," the coils

must have an equal number of currents passing through them in the one direction and in the other.

FRANK N. FREEMAN.

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An Experimental Study of Sleep. BORIS SIDIS. Boston: Badger. 1909. Pp. viii + 106.

In this work the author records the results of numerous experiments on the production of sleep in animals and in children, the characters of reactions found in sleeping individuals, and uses this material to construct a theory of sleep. In the discussion of his results we find much on allied states, hypnoidal and hypnotic, as well as on sleep. Much of the experimental part is similar to and in accord with the work of Heubel, and in the theoretical portion the main view-point of Claparède is taken.

Emphasis is laid on the psychic factors in sleep and any supposition of toxic influences or conditions is shown not to be necessary, and, in fact, to be contrary to certain facts that have been observed.

In addition to the three states commonly considered to be the only possibilities, sleep, waking, and hypnosis, Sidis differentiates a fourth state, intermediate between the hypnotic and sleep states, to which he has given the name hypnoidal. This state we pass through when going to sleep and also when awaking. We also have to pass through this state when being placed in a hypnotic condition, and we pass through it when returning to normal from the hypnotic state. An individual may be asleep, be partly "waked," and thus put into the hypnoidal state, and thence led into the hypnotic state. In this way the relationship of hypnosis and sleep is much more easily understood. At times it appears as if the author identified this intermediate, hypnoidal state with all subwaking states, but it is difficult to determine whether or not he believes the hypnoidal to be a special kind of subwaking state. This intermediate state is given two names, hypnagogic and hypnapagogic, depending upon the condition to which it leads, sleep or wakefulness.

It is in this intermediate state that Sidis locates dreams, for in it he finds a crowd of hallucinations. Another work is promised on this interesting topic, and we need not prematurely consider the author's views on the matter at the present time.

The general position of Claparède is taken, viz., that sleep is not a disease, it is not a pathological state, it is not due to toxins or autointoxication, and is not caused by cerebral or nervous anemia or hyperemia. Sleep is an active function, "as much of an instinct as hunger or sex." "Phylogenetically and ontogenetically, the sleep states of higher animals are developed out of undifferentiated, intermediary, subwaking, hypnoidal-like states found in the resting states of the lower representatives of animal life. The hypnoidal state is the primitive rest state out of which sleep arises. Briefly put, the hypnoidal state is the germ of sleep. Physiologically and psychologically considered, sleep is an actively induced passive state in relation to the external environment; the psychophysical systems have their threshold raised in relation to the external

stimulations; the rise of threshold is induced by a mass of impressions possessing little or no variability, by limitation or by relative withdrawal of stimulations, or, what is the same, by monotony of stimulations, and by limitation of voluntary movements." As compared with the rise of threshold in sleep, the author considers there is a lowering of the threshold in hypnosis, but the reviewer has not found any indication of the author's view of the threshold condition in the intermediate, hypnoidal state.

A further distinction between sleep and hypnosis is made, that in the former there is a relaxation of the attention, and in the latter there is a fixation of the attention.

It may be said that the monograph is a reprint from the *Journal of Abnormal Psychology,* without acknowledgment. A bibliography of about 250 titles is appended, but it has no relation to the matter of the monograph, for few of the books and articles are referred to in the body of the work, and some of those to which attention is called are not included in the bibliography. It is unfortunate that the author did not consider it necessary to be more specific in the bibliography, because dates, and, in referring to general works not especially pertaining to the subject, page references would have added to its value. Nearly half of the references are without any indication of date of publication, and there are no page references.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. May, 1909. *The Idealism of Edward Caird* (pp. 259–280): JOHN WATSON. – Caird objected to any philosophy which ignores the fact that is the subject of knowledge. He could not admit that epistemology should be distinct from metaphysics. Idealism, for Caird, refuses to admit that the rationality of the universe as a whole is a debatable question. As Caird puts it: "The only reasonable controversy between philosophers must be, on the one hand, as to the nature of the all-embracing unity on which every intelligible experience must rest, and on the other hand as to the nature of the differences which it equally involves." *The Springs of Art* (pp. 281–298): J. MARK BALDWIN. – There are two springs of art, imitation and self-exhibition. But these do not produce different sorts of art. They are present in all art. *The Present Meaning of Idealism* (pp. 299–308): ERNEST ALBEE. – Both materialism proper and subjective idealism are things of the past. Progressive idealists believe as little as realists in original *a priori* principles prior to concrete experience. There is no essential quarrel between realism and idealism if both adopt the teleological standpoint. *Absolutism and Teleology* (pp. 309–318): A. W. MOORE. – Aims to state the present situation in the discussion between absolutists and evolutional empiricists with respect to its bearing on ethics. Can the ideal in con-

duct be absolute, all-inclusive, fixed, and given, or must it be constructed in the process where it functions? Can an absolutist be a consistent evolutionist? An absolute standard prior to process can admit only superficial evolution. *Reviews of Books:* W. WUNDT, *System der Philosophie,* by George S. Fullerton. JONAS COHN, *Voraussetzung und Ziele des Erkennens,* by Warner Fite. E. B. TITCHENER, *The Elements of Psychology of Feeling and Attention,* by Edwin B. Holt. *Notices of New Books. Summaries of Articles. Notes.*

ARCHIV FÜR GESCHICHTE DER PHILOSOPHIE. Band XV., Heft 3. April, 1909. *Kants Lehre von Ding an sich* (pp. 291–318): ANNA TUMARKIN. – In Kant's system the *given* of sensation is to be associated not with the *Ding an sich* but with the subjectivity of the individual. Hence the gate is not closed to a rationalistic monism, which rather is the goal of Kant's metaphysical aspirations. *Die Hegelsche Logik und der Goethesche Faust,* eine vergleichende Studie (pp. 319–341): J. FISCHER. – "Faust" is Hegelian throughout—in its theme, for example, self-active development, and in the circular movement of the drama through a negative phase, culminating in the recognition that truth is a way and a life, not a goal. *Schopenhauers Auffassung des Verhältnisses der mathematischen Begründung zur logischen* (pp. 342–364): O. JANSEN. – Schopenhauer's errors are in part that he proposes as improvements on mathematical demonstrations methods essentially the same, and that he mistakes definitions for principles. *Worin weicht Thomas bei der Darstellung und Beurtheilung Spinozas von Herbart ab?* (pp. 364–379): A. RICHTER. – Thomas in his "Spinozas Individualismus und Pantheismus" maintains that Spinoza used his mystical, monistic pantheism merely as a cloak and introduction to his atomistic, automatistic pantheism; while Herbart recognized in Spinoza a high-minded, inspiring, original thinker, but confused and far from thorough in his metaphysics. *Jahresbericht über die Philosophie im Islam* (pp. 383–428): M. HORTEN. – About twenty recent publications of ancient Mahommedan texts are critically reviewed, with special attention to Ibn-al-Arabi's Commentary on the Koran, A.D. 1317–1899. *Die neuesten Erscheinungen. Eingegangene Bücher.*

REVUE PHILOSOPHIQUE. June, 1909. *La logique expérimentale de J. M. Baldwin* (pp. 561–575): A. LALANDE. – An exposition of the thought in the second volume of Professor Baldwin's Genetic Logic. *La philosophie néerlandaise (1st. article)* (pp. 576–596): E. D'OLIVEIRA. – Holland has been hampered by a scholastic Calvinism which subordinated philosophy to religion. In the middle of the nineteenth century M. Opzoomer, the Mill of Holand, prepared the way for greater freedom. The present movement groups itself about M. Bolland, an Hegelian, and M. Bierens de Haan, a "militant" Spinozist. *Les bases psychologiques de l'élocution oratoire* (pp. 597–613): G. SAINT-PAUL. – Methods of preparing a discourse can be classified as graphic, visually or auditively premeditative, or verbo-motively premeditative. During delivery there is antecep-

tion, metaception, or paraception of the phrases by the speaker. *Notes et discussions. Antipragmatisme et hyperpragmatisme:* F. PAULHAN. *Activité mentales et synthèse:* G. DWELSCHAUVERS. *Analyses et comptes rendus. De la méthode dans les sciences:* ABEL REY. P. Hermant et A. van de Waele, *Les principales théories de la logique contemporaine:* A. LALANDE. Dr. Stephan Maticévic, *Zur Grundlegung der Logik:* JEAN DAGNAN-BOUVERET. S. Joteyko et M. Stefanowska, *Psycho-physiologie de la Douleur:* R. MEUNIER. R. Meunier, *LaHachich:* DR. CH. BLONDEL. Dr. Demetrius C. Nadejde, *Die Biologische Theorie der Lust und Unlust:* L. POITEVIN. J. Paulsen, *Das Problem der Empfindung:* L. POITEVIN. Clara und Williams Stern, *Erinnerung, Aussage und Luge in der ersten Kindheit:* G. L. DUPRAT. *Revue des périodiques étrangers.*

REVUE METAPHYSIQUE ET DE MORALE. May, 1909. *Une phase du développement de la pensée mathématique* (pp. 309–356): L. BRUNSCHVIEG. – The development of a mathematical system connotes a philosophy, as arithmetic pythagoreanism, and analytic geometry the philosophy of Spinoza and Malbranche. But modern analysis has not yet attained its philosophy. It has only been interpreted in terms of neo-pythagoreanism and neo-aristotelianism. *Sur le syllogisme de la première figure* (pp. 357–366): E. GOBLOT. – A criticism of M. Lachelier's interpretation of the major premise as implying a necessary relation instead of a constant relation as is the author's contention. *Correspondance inédite de Ch. Renouvier et de Ch. Secrétan (Suite)* (pp. 367–385). – Concerns chiefly the *Philosophie de la Liberté* with comments on current events, especially of 1871–2. *Sur le Pragmatisme de Nietzsche (Suite)* (pp. 386–412): R. BERTHELOT. – An analysis of the rationalistic and romantic elements in Nietzsche and a summary account of elements entering into other pragmatisms. *Études critiques. La religion d'aujourd'hui (suite et fin):* G. SOREL. *Questions pratiques. Conditions d'une doctrine morale éducative (suite et fin):* J. DELVOLVÉ. *Supplément.*

Bulletin de L'Institut Général Psychologique. 9ᵉ Année: No. 1. January–February, 1909. Paris: Institut Général Psychologique. Pp. 236.

Cooley, William Forbes. *The Individual: a Metaphysical Inquiry.* Archives of Philosophy. No. 3. Columbia Contributions to Philosophy, Vol. XVIII. No. 2. New York: The Science Press. Pp. 95.

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Mondolfo, Rudolfo. *Tra il diritto di natura e il comunismo: Studi di storia e di filosofia.* Parte 1ª. Mantova, Italy: Prem. Tip. degli Operai Via F. lli Bandiera No. 8. 1909. Pp. 70.

NOTES AND NEWS

THE Government Hospital for the Insane at Washington, D. C., has just issued a pamphlet entitled "Bulletin No. 1" under the editorship of Dr. William A. White. The Bulletin contains the papers presented by the members of the staff of the hospital at a series of staff meetings of the past winter. The purpose of the publication is set forth by Dr. White in the preface of the Bulletin, from which we quote the following statement: "This bulletin is put forth as an effort toward fulfillment of what is conceived to be the true position of a hospital for the insane—it should not be a center for psychiatric information, but a center for the distribution of that information." Some of the papers published in the Bulletin are somewhat general in character, owing to the fact that they were originally addressed to the members of the medical profession in Washington, and are, in fact, designed with special reference to the general practitioner. Many, however, comprise the results of original research work, and will, we think, be of interest to psychologists. We quote in full the contents of the Bulletin: "The relation of the hospital for the insane to the medical profession and to the community," William A. White; "The present state of psychiatry in America," Henry W. Miller; "The morbid anatomy of mental disease," I. W. Blackburn; "The functional view of the insanities," Shepherd Ivory Franz; "The standpoint of histopathology in the study of mental disease," Nicolas Achúcarro; "The use of association tests in determining mental contents," Shepherd Ivory Franz and William A. White; "A case of unilateral hallucinosis (alcoholic)," William A. White; "A case of delirium produced by bromides," Mary O'Malley and Shepherd Ivory Franz; "The cytological examination of the cerebrospinal fluid," William H. Hough.

THE death of Professor Simon Newcomb was announced in the last issue of the JOURNAL. We quote from the *Nation* for July 22 the following notice: "We are informed that the library of the late Professor Simon Newcomb is offered for sale either *en bloc* or in parts. The collection is naturally rich in books on astronomy, mathematics, and physics, and also has a large number of works on economical subjects. A typewritten catalogue of the library had been prepared under Professor Newcomb's personal direction. To any one contemplating purchase of the library this catalogue will be sent on application to the executor of the estate, at No. 1620 P Street, Washington, D. C." Until about the middle of September the library will remain in place, and may be examined by persons interested in securing this collection. It was, we understand, the hope of Professor Newcomb that his library would help in the training of some future scientist, or in his work. He was, therefore, especially desirous that the library should not be divided, but that it should belong to some institution in which researches in astronomy and kindred subjects were carried on. With this end in view, the value of the library is estimated at only $7,000, which is the estimated cost of the purchased books alone, although the library contains a large number of transactions of societies and other gift books, together with many thousand pamphlets, which are

classified and arranged for easy reference and which include reprints of memoirs of astronomy, mathematics, and physics. The library, it is believed, is the most complete of its kind, with the exception, perhaps, of that at Harvard University, including the Harvard Observatory library. In addition to the library, there are several hundred books, reports, and volumes of periodicals on economic subjects. This smaller collection, which has not as yet been catalogued, is also for sale, either with or apart from the library.

THE plan, proposed at the Fourth International Congress of Philosophy, held at Heidelberg last September, to have an annual bibliography of philosophical publications, has been put into execution. The first issue of this bibliography, which is to be entitled *Die Philosophie der Gegenwart Eine international Jahresuebersicht,* will, it is expected, appear at the close of the present year, at the University of Weis at Heidelberg. It will contain a list of philosophical works published in 1908, and will be divided into the three following sections: (1) one or two articles on national or international questions of general interest; (2) a list of publications in the following order: (*a*) history of philosophy; (*b*) general, metaphysical philosophy; (*c*) psychology; (*d*) logic and the theory of knowledge; (*e*) ethics and sociology; (*f*) esthetics; (*g*) philosophy of religion; (3) a detailed index of the two preceding sections. The second section will contain, in addition to the list of publications already described, a brief summary of the contents of each of these works, and an account of the reports and criticisms published on the subject of which the work in question treats. The editing of this annual bibliography will be in charge of an international committee composed of representatives from Germany, France, Italy, England, Russia, and America. The purpose of this new annual is similar to that which animates the International Congress, namely: to bring together philosophers of all countries, to facilitate the mutual acquaintance of their works, and to promote their concerted action.

ANNOUNCEMENT is made of the death in London on July 15 of Father George Tyrrell, the leader of the modernistic movement in England and a writer whose work is suggestive and interesting. The writings of Father Tyrrell comprise a large number of books and numerous articles and essays appearing in the various periodicals. We quote from the list of his books those of especial and wide interest. "External Religion: its Use and Abuse"; "The Program of Modernism: a reply to the encyclical of Pius X, Pascendi dominici gregis, with the text of the encyclical in an English version from the Italian by the Reverend George Tyrrell, with an introduction by A. Leslie Lilley"; "Medievalism: a reply to Cardinal Mercier." The contents of one of his recent books, namely: "Through Scylla and Charybdis; or the Old Theology and the New," is perhaps suggestive of the scope of his interest. We quote from the table of contents: I. Introduction; II. Reflection on Catholicism; III. Lex orandi and lex credendi; IV–V. Semper eadem; VI. Mysteries a necessity of life; VII. Pragmatism; VIII. Rights and limits of Theology; IX. Prophetic history; X. The corporal mind; XI. Revelation; XII. "Theologism"; XIII. "From Heaven or of men." Among the essays of Father Tyrrell which

have appeared in the periodicals may be mentioned "The Clergy and the Social Problem," *American Catholic Quarterly,* Vol. 22, pp. 151–9; "Prospects of Modernism" and "Bergson on Creative Evolution," *Hibbert Journal,* January, 1908; "Limits of the Development Theory," *Catholic World,* September, 1905.

THE *Rivista di Psicologia Applicata* contains, in its current issue, a notice of the death of Giovanni Vailati, which occurred on the eighteenth of May of this year, at the early age of forty-six years. The review also gives a brief appreciative notice of his life and work. The note calls attention to the variety of his interests, including mathematics, philology, and economics, as well as psychology and logic, and to the essential alertness and vivacity of his mental temperament. The brief account of his personality leaves the impression of an unusually sympathetic and genial, as well as a sincere mind. The *Rivista* announces a collected volume of all his writings, edited by Professor Calderoni, of Florence, to whom subscriptions (the cost being 12 lire) may be addressed, at No. 3, Via Solferino. Professor Vailati, it may be added, was one of the foremost among the band of Italians who have taken an active interest in the progress of philosophic thought in America, and will be recalled by readers of this JOURNAL as a valued contributor to its pages, his articles entitled "The Attack on Distinctions" and "On Material Representations of Deductive Processes" having appeared in its volumes for 1907 and 1908, respectively.

DR. W. H. SHELDON, preceptor of philosophy in Princeton University, has been made professor in philosophy in Dartmouth College. Dr. Sheldon took his A.B. degree at Harvard University in 1895. In 1896 he received the degree of A.M. and in 1899, the degree of Ph.D. He was assistant in philosophy at Harvard from 1898–1899, and in 1899–1900, he held the same position in the University of Wisconsin. During the year of 1900–1901 Dr. Sheldon was teaching fellow at Harvard University. From 1901–1903 he was assistant in philosophy in Columbia University; from 1903–1905, tutor in philosophy in the same university. Since 1905, Dr. Sheldon has been preceptor of philosophy at Princeton University.

DR. J. MARK BALDWIN, professor of philosophy and psychology in Johns Hopkins University, has recently resigned. Dr. Baldwin has this spring been delivering a series of lectures under the auspices of the Mexican Department of Public Instruction on university organization and scientific psychology. At the Darwin centenary at the University of Cambridge Dr. Baldwin was present as the representative of Johns Hopkins University and of the Mexican Department of Public Instruction. Dr. Baldwin expects to remain abroad some time.

THE JOURNAL desires to correct an error which appeared in its last issue for July 22, in the notice of the meeting of the Sixth International Congress of Psychology. The announcement was there made that Professor M. Meyer, of Columbia, would be one of the Americans to participate in the individual discussions at the Congress. Professor Meyer is from the University of Missouri.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

CONSCIOUSNESS, THE SENSE ORGANS, AND THE NERVOUS SYSTEM[1]

IN articles already published[2] I have suggested that if we directly question reflective experience as to what consciousness is, we get the answer that it can not be identified with the objects of that experience, but is to be identified with a relation between them, and that this relation is the relation of meaning or implication, in short, the logical relation. In other words, I have taken the fact of meaning to be the fact of consciousness, and urged, consequently, that consciousness is just the existence of logical relations. If all the rest of experience existed, but these relations did not exist, I am of the opinion that we should not be warranted in describing such a situation as one in which there is consciousness of anything. These conclusions were based on a direct analysis of reflective experience without considering the relation of the organism which is said to be conscious to its surroundings. It is natural, however, to expect that such a consideration would have important bearings on these conclusions. For if we are entitled to believe that consciousness is a result of the interaction between the organism and its surroundings, the ways in which this interaction is effected should not be irrelevant to the conclusions reached by the analytic study.

It is pertinent to ask, therefore, How is that interaction between the organism and its surroundings effected which results in conscious experience? The answer is old and obvious. It is effected by means of the sense organs and the nervous system.[3] By these means what the organism in interaction with its surroundings undergoes, is made

[1] This article is a revision of a paper read before the meeting of the American Philosophical Association, at Baltimore, in December, 1908, as a contribution to the discussion of idealism and realism.

[2] "The Nature of Consciousness," this JOURNAL, Vol. II., p. 119, and "The Problem of Consciousness" in "Studies in Philosophy and Psychology: The Garman Commemorative Volume," p. 137. See also "Consciousness and Meaning," in *The Psychological Review*, Vol. XV., p. 397.

[3] I limit the consideration here to the human organism for the sake of clearness in the general exposition.

into a conscious experience.[4] I desire, therefore, to emphasize certain well-known facts about the structure and functions of the sense organs and the nervous system, and to point out that they lead to conclusions in suggestive conformity with those drawn by other means.

A superficial examination of the sense organs and the nervous system reveals a striking difference in structure and function which becomes more striking the more thorough the examination is made. Thus the sense organs appear to be constructed and differentiated in relation to specific differences in the stimuli which may affect them, while the nervous system appears to be constructed and unified in relation to coordinated activity by the organism. While the sense organs put the organism in diversified interaction with its surroundings, the nervous system prevents this diversification from resulting in disintegrated and isolated reactions. It is thus apparent that the nervous system secures to the organism individuality and unity of life in spite of very great diversity of stimuli and environment. We have in these considerations, I believe, the means of stating the relational view of consciousness in biological terms. An organism so situated that it should be in differentiated interaction with the specific differences in the world about it, but which should, none the less, react in a unified and coordinated manner no matter how it might be

[4] Lest there may appear in this statement a forgetfulness of the question, How can such interaction produce consciousness? I beg to refer the reader to the following words of Dr. Adolf Meyer: "We admit that we do *not* know *why* certain combinations of molecules of definite kind form a constellation which implies with necessity the phenomena of electricity. It is a fact which we accept as a fact of experience. Those who are trained to make the dualistic division between mental experiences or occurrences, and physical ones, merely *assume* that they can understand *why* such constellations of certain metallic stuffs as the above mentioned, go with the phenomena of magnetism, others with the phenomena of electricity, etc.; and they refuse to see that the biological events of the order of mentation are no doubt in a similar way dependent on sufficient organization and constellation of an organism and that the coexistence of these constellations with their manifestations is a fact we have to accept as merely *one instance* of the general problem of the qualitative differentiation of the universe. The question why mind is mind, and just what it is, can be as little answered as what gold is, and why it is and why it should be so. Consequently, the impossibility of getting an answer to the puzzle—what makes mind mind, and what the relation is between the underlying physical constellations and the 'result'—is only part of the problem why the world is organized as it is. Our inability to answer that does not imply that we are any worse off in regard to mind than with other facts of quality which we accept without puzzle, satisfied if we can determine the *conditions* of their occurrence; and it does not follow that for this reason, mind must be something quite different from the rest of experience, provided that we realize that it presupposes sufficient organization and opportunities of work." *Psychological Bulletin*, Vol. VI., p. 177. The reader is referred to the article from which these words are taken for a discussion of consciousness analogous to the present study.

stimulated, might well be defined as a conscious organism. Its consciousness would be a relational system integrating and unifying its differentiated interaction with its surroundings. Furthermore, its consciousness would naturally be marked by many of the characteristics usually attributed to consciousness. It would, for instance, be what we call individual and personal, and, being unified, it would present features often ascribed to a self or a mind. Different organisms could readily be conceived as exhibiting those varieties and even abnormalities of experience with which we are familiar and which appear to be due to individual differences in structure or circumstances. On some of the basal features of this general view I wish now to be more explicit.

That the specific structure of a given sense organ disappears in its corresponding sensory nerve is a fact frequently commented upon. The eye is an optical apparatus, but not so the optic nerve. While the sensory nerves may be specifically habituated to the activities of their corresponding organs, they none the less present a similarity of structure and function in marked contrast with the diversification of the organs themselves. We seem, therefore, forbidden to attempt to account for the differentiation of the organs without assuming a corresponding differentiation in the stimuli which affect them, and forbidden also to assign to the sensory nerves the particular functions which the organs themselves fulfill. It is the eye, not the optic nerve or its cortical center, which sees; it is the ear, not the auditory nerve, which hears. Thus the general lack of structural continuity between the sense organs and their nerves points, it seems to me, on the one hand, to the fact that the organism is related in specifically different ways to specific differences in its surroundings and, on the other hand, to a radical difference in function between the organs and their nerves. The organs possessing structural differences of specific character are, properly, specifically sensory, while the nerves, just because they lack these structural differences, are not.

Turning our attention to the organs exclusively, I repeat the observation that they point to specific differences in the surrounding world. In other words, it would appear that there are specific differences in the surrounding world with which the organism would not be in interaction unless there were organs by means of which this interaction is brought about. Or, if I may speak in what is often regarded as the objectionable language of teleology, the organs exist for the purpose of realizing interactions which, otherwise, would not be realized. Eyes would be useless unless there were something to see. Accordingly we may not account for vision by pointing to the structure and functions of the eye alone. The

structure is adaptive and the function interactive. Seeing would thus appear to be, not a process set up exclusively in the organism itself, but an interaction or relation between the organism and its surroundings effected by means of the eye. It is not a reaction solely, but an interaction as well.[5] Sensation in general, it appears to me, should be similarly described.

If we identify sensations with the specific kinds of interaction which may be brought about by specific organs, sensations appear to be robbed of much of the mystery with which they have often been clothed. They may not, with Locke, be described as an order of existences intervening between a supposed mind and a supposed world. They need no mysterious process of projection in order that they may appear to constitute an outer world without really doing so. It is natural to them to be objective. It is natural that we should not find them in the brain—or perhaps I should say it is natural that we should find only a brain when we examine a brain —and that we should find them constituting in large measure the objects of the world in which we live. They would appear to be natural events of the same general status with all other natural events. They are not knowledge any more than an eclipse of the moon is knowledge. They are, like such an eclipse, objects to be studied, the antecedents and consequents of which it is the business of knowledge to discover.[6] Since, therefore, the structure and functions of the sense organs provide for a variety of interactions between the organism and its surroundings, they appear to me to account thereby for the sensory content of experience without the addition of any faculty or power of sensibility, simple apprehension, or awareness. The bare existence of the interactions thus constituted appears to be the fact of sensation.

In the light of these considerations the distinction between primary and secondary qualities may indeed be regarded as sound, but also as requiring restatement. The restatement should be made, not in terms of epistemology, but in terms of causation. In order, that is, that certain specific differences in the world may have their specific effects there must be some means provided for their specific causality to operate. Without such means, the differences might well exist, but lack their appropriate efficacy. Such means may well be the sense organs or structures analogous to them. For instance, a

[5] Compare the article by Professor Dewey on "The Reflex Arc Concept in Psychology" in *The Psychological Review*, Vol. III., p. 357.

[6] Compare the article by Dr. Bush on "Knowledge and Perception," in this JOURNAL, Vol. VI., p. 393; and compare also my own article, "Perception and Epistemology," in "Essays Philosophical and Psychological: in Honor of William James," p. 137.

landscape may in itself have all the variety of its objects and their relative positions which we ordinarily ascribe to it, but this variety may fail to affect the sensitive plate in a camera as a variety of objects in relative positions unless a lens is interposed. Thus we approach the primary qualities of things as we rob things more and more of their specific differences. Secondary qualities are those which require the intervention of some special structure if their appropriate causality is to be effective. This view preserves the important distinction between primary and secondary qualities, but by explaining the distinction in terms of causation removes it from the perplexities of epistemology. Furthermore, if this interpretation of the distinction is correct, sense organs or similar structures may be necessary to make the secondary qualities effective according to their specific characters, and yet not force us to conclude that the existence of these qualities is subjective.

So far, then, as the sensory content of experience is concerned, the view here outlined suggests that that content is amply provided for by the existence of specific means for rendering the differences in the world effective according to their specific characters. In order, therefore, that what we are wont to call sense qualities may exist, consciousness would appear to be unnecessary. Such things as colors and sounds could operate according to their own nature anywhere within the sphere of their influence provided only there existed the appropriate means for making such operation effective. And what on this view appears true of colors and sounds appears to me to be true also of all varieties of sense qualities.

Important, therefore, as the existence of sense organs may be for the richness and variety of our conscious life, sense qualities do not appear of themselves to constitute that life. Did our sense organs exist in isolation and remain only disconnected media for specific causation, the world might possess all the variety we ascribe to sensation, but contain no more consciousness than exists in a camera when the sensitive plate is exposed. But they exist neither in isolation nor disconnection. We possess them in number and they are connected by a most intricate mechanism, the mechanism of the nervous system.

When we turn to examine this mechanism, we are impressed by the fact, already noted, that it does not possess the specific structural differences characteristic of the sense organs. It would, therefore, appear to play no part in the production of sense qualities. To be sure we distinguish between sensory and motor nerves, but the distinction seems to be based on differences in terminal endings or in the direction of what we call the nerve current rather than on any radical difference in function. The service which the nervous

system, as a whole, and the brain in particular, fulfills, seems to be that of connected and coordinated reaction. By means of this mechanism the organism is enabled to react as a whole and in a coordinated manner to any stimulus no matter by what organ that stimulus is received and no matter what may be its specific quality. A given stimulus produces, thus, not only its appropriate sense quality, but also induces, on the part of the organism, a reaction which is not confined solely to the sense organ affected, but which involves in some measure the entire organism itself. In other words, the organism with its sense organs and its nervous system provides a center for the connected interplay and coordination of the varied differences in the world without allowing these differences to lose their specific characters. In such a statement we have, I venture to believe, a biological expression of the nature of consciousness. Its similarity to the analytic expression made at the beginning of this paper is, I think, apparent. For an organism so situated that differences in stimuli should, none the less, produce in it coordinated and unified reactions would be an organism in which the reception of stimuli would involve adaptive and even prospective adjustments. In other words, sense qualities would become indexes of a variety of possible reactions and thus be connected in the relation of implication.

The nervous system is, moreover, not only a mechanism for connection and reaction, but it is also a mechanism with an activity in a measure independent of the activity of the sense organs. For the nervous system is also a connection and coordination of nerve centers culminating in the brain. Stimuli produce not only adjustments external to the organism, but also internal systematization of connection. Thus the organism as a center for the connected interplay and coordination of the varied differences in the world is such a center in conjunction with a highly specialized and integrated life of its own. It is thus able to preserve, in spite of changing stimulation and environment, an individual stability. It thereby conserves its own past and draws upon it in its own reactions. It has, consequently, a peculiar efficacy of its own which is not to be explained solely in terms of the stimuli affecting it, and which presents those features of spontaneity and initiative so characteristic of conscious beings. To set a limit to the system of intricate natural connections which may be effected as a result of the equipment of the organism in relation to its environment is impossible. The richness of the life thus engendered baffles the imagination. It seems as if nature in producing highly organized beings achieves her completest syntheses. To call them minds appears but to give them another name. We thus approach something like the conception of Aristotle, that mind

is not simply the thing which knows nature, but is, perhaps, nature's completest realization. The consonance of this view with the theory of evolution and with the relational theory of consciousness attained by an analytic study of reflective experience is so apparent that no detailed exposition of it seems necessary.

The brevity of the exposition of the nature of consciousness here presented has given it, I hope, clearness and precision which greater detail might have obscured. I should like, however, in conclusion, to emphasize again one of the considerations of the preceding paragraph. It is customary with philosophers to speak of the flux of things and to point out that the flux takes an order only because there arise within it certain factors of sufficient relative stability to provide for repetition and sequence under the control of such connections as may exist among the elements of the flux itself. Now the stability given to the organism by the nervous system is manifestly different from what it would otherwise have. It is a stability by means of which the flux of sensation takes an order. In spite of the variety of sensation the nervous system changes slowly and, with its changes, undergoes at the same time increasing internal coordination. The order, therefore, which sensations take in consequence would appear to be subjected to this movement of internal coordination. There thus exists amid the flux of sensation a factor which is not only relatively stable, but which has a stability of such a kind that the movement of internal coordination is relatively independent of the external movement of the flux. Thus we might say that so much of the flux of sensation is ordered as the internal movement of coordination will allow. This ordering would, consequently, be selective and progressive. One is thus tempted to conclude that in the direction of such considerations as these lies the natural explanation not only of consciousness in general, but also of its more specific forms of memory and imagination.

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DEPENDENCE UPON IMAGINATION OF THE SUBJECT-OBJECT DISTINCTION

THE familiar meaning of imagination is presented in the French definition: "1° faculté que possède l'esprit de se représenter des images des objets; 2° faculté de concevoir des combinaisons que ne fournit pas la réalité."[1] We dwell upon the same fact, presented in the definition from the point of view of the older faculty psy-

[1] "Dictionnaire Général de la Langue Française," Hatzfeld et Darmesteter, p. 1271.

chology, when we recognize that we may bring before us past events and ideas, and that we may construct from out our present or past knowledge situations and circumstances that have not as yet their counterpart in our experience. It is this ideal presentation, this act of maintaining the absent as present, of rendering the non-existent real and equally potent with the present facts about us, that we describe by the term imagination.

Interdependence of memory and anticipation we find in every intellectual process. Action which considers in the light of past experiences the consequences of present events, is intelligent action. We are intellectually competent to the degree in which we see the present in its relations to the past and future. It is our ability to reproduce in imagination past impressions and ideas that enables us to foresee the possible outcome of present events, and thus to guide our actions in the light of such anticipations; while the ability to construct imaginatively future situations, to conceive certain results as possible, to anticipate later developments, enables us to employ our knowledge from past experiences in the judgment of present issues. Without the interplay of memory and anticipation, then, no intelligent action is possible.

It is this fact of focusing past experiences and anticipations of the future upon the present situation that maintains for us the continuity of reflective experience, enabling us to reflect upon changing situations and developing data, to discern their bearings and significance; and to think to some purpose. Because we can present to ourselves that which is not present, and can maintain it real as the present facts themselves, we have opportunity to move at will among our experiences; we can have access to a universe of discourse, and, within its limits, may range between past and future. Thus we are empowered to discern the implications of presented data; and thus we may entertain hypothetical explanations of the meaning of discrepant facts, may project tentative plans for their adjustment. The purposiveness and the practical character of thinking are thus reiterated by describing the function of imagination in reflection. Moreover, it is this interference of memory and anticipation which generates the doubt that characterizes the thinking situation until it is resolved, and by which we are hailed from one investigation or inquiry to another. For, without remembrance of the past, the future is not questioned, presents no difficulties; while, without anticipation, the past is inoperative, unenlightening, and insignificant. It is the peculiar interference of past and future in the present that breeds intellectual doubt and discrepancies and that touches off the reflective process.

We may observe throughout the reflective process a reference to

something absent, a treatment of this something absent as ideally present, in the reference of the undetermined facts to the inclusive meaning, to the satisfactory explanation of their significance, which is presented as potentially there in the suggested interpretation or hypothesis. Physical objects have this aspect of possibility whenever we perceive them. Whenever we have perception there is representation on the basis of possible realization, there is ideal presentation which portends the total reality—the real, comprehensive interpretation of the facts.

I am driving just at dusk along an ill-frequented road on an evening in summer. Suddenly, a vague blackness looms ahead of me, and I peer out beyond my horse's ears to discover or to dispel it. An intensifying and an enlarging of this blackness persuades me that something is rapidly approaching. Other encounters on these roads with wagons, with countrymen, and with stray cows and dogs, flash across my mind. As I look, the thing gains some shape; it seems now to be rounded on the top and at the sides. The idea of a hay-wagon presents itself to me; but the object is, I decide, too low and too narrow to be a hay-wagon. I listen intently; no sound reaches me save the clack of my horse's hooves and the squeak of my own carriage wheels in the soft sand of the road. If a carriage were approaching, I think I should hear it. The thing is too broad and high to be a man, and its shape does not suggest any animal I know, except an elephant. Then I am impressed by the steadiness of the advancing outline. It can not be moving towards me. If it is standing still, will it wait and let me drive into it, I wonder? Shall I go on? I tighten my hold upon the reins, and as I do so I feel my horse turn sharply to the left. The object assumes the shape of a cone as I look, and a familiar odor of fresh-cut grass reaches me. There flashes into my mind the suggestion of the unsteady top of a load of hay sliding unnoticed to the roadway. But in the instant that I pass the haystack, I see that the road here bends away abruptly to the left, and that the haystack stands, unmoved by my fears and conjectures, in the unfenced field on the right of the turn.

If this account faithfully chronicles an experience in perception possible to any of us, it would seem to bear out our description of perception in terms of possibility and realization. In the perception of the object in the foregoing story we have the object offering marks for identification and the perceiver tendering from out of his experience suggested explanations of their significance; we have representation, that is, on the basis of possible realization. In the new representation, in the haystack as perceived, some of the possibilities inherent in the data of the perceiving situation have been realized; certain of the appearances of the doubtful object have sub-

stantiated themselves and become self-explanatory, while certain of the ideas tendered by the perceiver as suggestions were interpretive of the undetermined thing and did eventually become its verified meaning. The fulfillment of these potentialities was made possible by imagination, which enabled me to bring to bear upon the identification of the object ahead of me on the road representations of objects previously encountered, and to foresee the possible development and consequences of present facts and suggestions. Possibilities thus became potent and considered factors in the solution of the difficulty, and were used as additional data of the situation. In the adaptation of past ideas and events to the present experience, the interpretation or explanation of the undetermined thing was produced. It was only as these factors—fact and meaning, reciprocally developed and defined each other, only as the object *was* identified, that the concept emerged. Certain of the suggestions became, as *the* meaning of the doubtful thing, equally real with the fact they explained. We have in the concept, then, the realization of possibilities on a level with the existential facts. The concept may thus be manipulated, may be handled as a thing; it takes its place among other facts, and is become objective. It may again be put into currency, where it is subjected to changing values and varying uses, and so modified. As a means of interpretation, an explanation of new, undetermined facts, it may be used later in a doubtful situation. The earlier act of perception, reduced now to an image, may, as a representative of sane idea or event, function in a succeeding process of reflection as a *tentative* suggestion, a *hypothetical* explanation. What was but now in the earlier process of reflection first a tentative, and then an assured, means of identification; and later, as the result of that process, a new fact, existentially real and objective, may thus become again a suggestion merely, a *personal* conjecture, a factor whose meaning is assured, but whose relevancy in this situation is undetermined. By this return to a state of precariousness, its vitality and its efficiency are preserved. Only as ideas do thus again enter the lists and put on the armor of doubtfulness, are they operative and determining factors in reflective experience. By the fact of return from an assured reality to a condition of suspense of doubtfulness, which we have seen accomplished upon the reënlistment of the concept in new reflective activity, the distinction between subject and object prior to a specific process of reflection is, we feel, invalidated. For it is seen that it is only within that reflective process that a fact or meaning, is, as a matter of fact in our experience, considered as *subjective* or *objective* by us; and that the distinction between these terms therein alone has relevancy or worth.

The distinguishing characteristic of a scientific mind is that it can hold off the interpretation from the fact it explains, the perception from the thing perceived. This it does by imagination, which enables us to envisage the development of a present idea or event, and to entertain the idea of the present thing as it may be in the future. It is imagination which is responsible for our tendency to dramatize the conditions and elements of a reflective situation, distinguishing between *this thing* and *my conjecture* as to its future state. The idea of the outcome of the present situation stands, to our purposive analysis, in contrast with the present actuality. But to make the subject-object distinction dependent upon our ability to conceive the future of the present event, is to place it *within* the process of reflection, which we have shown to depend upon the interaction of memory and anticipation. To do this is to make the distinction purposive, a distinction instrumental in the solution of a particular difficulty, and implicit in every reflective process. Subject and object are opposed to each other only in theory, not in experience. And in experience they are distinguished and contrasted only at need. When the course of our activity runs smoothly we do not distinguish between fact and meaning, between this *thing* and my *conjecture* as to its significance. "These clouds mean rain," we say: "I mean *what I say.*" A mere review of our activity will indicate that object and idea are, in a great part of our experience, undifferentiated for us, and that our anticipations of the development of present facts are, ordinarily, undistinguished from the facts themselves. Is it not only when difficulty or discrepancy leads us to analyze the doubtful situation in order to resolve it, to inspect and classify its elements; to accept "given" facts, whose significance is undetermined, but whose existence and reality are assured; and to entertain, tentatively, ideas or meanings suggested by them as their possible interpretation, that the subject-object contrast does—as a matter of fact in our experience—exist for us? And does it not exist then because we do thus regard certain facts and conditions as *there,* unequivocally, and because we designate the unverified suggestions of their meaning as our *personal* interpretation and thus describe them in terms of our own uncertainty?

The subject-object distinction is, thus, seen to be an indispensable instrumentality in the solution of a reflective problem. It can constitute a difficulty only through a fixed conception of its existence prior to the particular situation which called it forth. However, to make the subject-object distinction a means for the solution of a specific intellectual problem, and to say that it is only in the purposive analysis of a reflective situation that it is significant, or—as a matter of fact—existent, is to proclaim a fact which is familiar in all ordi-

nary experience, but which is treason to the philosophic interest concerned in the maintenance and the discussion of "persistent problems."

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MAY A REALIST BE A PRAGMATIST?

I. THE TWO DOCTRINES DEFINED

IN the wake of the pragmatist movement has come a revival of interest in realism; and this revival makes it seem appropriate to undertake a comparison of the two philosophies with a view to determining, if possible, whether they are (1) implicative of one another, or (2) incompatible, or (3) merely compatible or neutral. A further reason for comparing realism and pragmatism rests on the fact that pragmatism has almost from the beginning been accused by its critics of being tainted with subjectivism; and this accusation has been repeated again and again in spite of the explicit denials by the pragmatists of any intention to oppose realism.

The situation is further complicated by the polemics of pragmatism which, naturally enough, are addressed almost entirely against the lately dominant school of absolute idealism. And the realists who are equally opposed to absolute idealism, but on grounds quite different from those of the pragmatists, find themselves somewhat at a loss to determine whether pragmatism is an ally, an enemy, or a neutral. For realism opposes absolute idealism in so far as it is idealistic and is non-committal on the question of absolutism, while pragmatism opposes absolute idealism in so far as it is absolutistic and is non-committal on the question of idealism.

Before realism and pragmatism can be compared they must be defined. There are differing degrees of realism, and there are different and mutually incompatible theories that have been joined with realism, but, nevertheless, the realistic thesis itself is simple and unambiguous. *Realism is the doctrine that the same objects that are known by some one may continue to exist when they are not known by any one,* or that things may pass in and out of the cognitive relation without prejudice to their reality, or that the existence of a thing is not correlated with, or dependent upon, the fact that somebody experiences it, perceives it, conceives it, is conscious of it, or in any way aware of it. In other words, realism is the contradictory of idealism (in the sense of subjectivism). Idealism declares: There is no object without a subject, meaning: There is nothing that can exist without a consciousness of it. Realism declares: There are objects without subjects, meaning: There can exist an object

without a consciousness of it. These definitions would seem clear enough in all conscience, but because of certain caricatures of the realistic position to be found in works on idealism, it may not be out of place to add to the statement of what the realist means a statement of two things that he does not mean. (1) He does not mean that objects are incapable of producing a knowledge of themselves. (2) He does not mean that a knowledge of an object may not be the cause, by means of the person who has such knowledge, of profound changes being made in the object known. In short, realism does not rear up any kind of wall between consciousness and its objects. It does not hold that knowledge makes no difference in the world in which it occurs, or that it is in any sense an epiphenomenon.

Quite aside from these two scarcely excusable misinterpretations of the realistic standpoint, it is necessary to recognize that that standpoint may suffer from seeming ambiguity by reason of the fact that it is possible to hold the realistic view with respect to certain kinds of objects, and the subjectivistic view with respect to other kinds of objects. To illustrate: A person may hold, with Locke and the physicists, that the secondary qualities are incapable of existing apart from some consciousness of them, but that the primary qualities are capable of existing independently. Again, one may hold that both primary and secondary qualities can exist apart from consciousness, but that abstract entities such as the $\sqrt{-1}$ are dependent upon the consciousness that conceives them. Or, again, one may share the strange belief of Berkeley that spiritual substances may be known to be in no way dependent for their existence upon the fact that they are known, while no physical substance can, without contradiction, be known to be capable of existing apart from the knowledge of it. In short, there is, perhaps, no one who is a realist with respect to all objects, or a subjectivist with respect to all. Even the solipsist interprets realistically his present knowledge of his own past. And even the naïve realist would (I should suppose) interpret subjectivistically such objects as pleasures and pains, the *esse* of which seems so obviously identical with their *sentiri*. But in spite of these various degrees and kinds of realism, the realistic standpoint itself remains perfectly simple and unequivocal. A person is a realist in respect to any class of objects just in so far as he believes that class of objects to be capable of existing apart from the cognitive relation.

And now that we have seen what realism means, and how it may be held in respect to certain objects and be repudiated with respect to certain others, it remains to be shown as a final step in its elucidation the distinctness or independence of the realism-idealism antithesis from various other philosophical antitheses.

1. To be a realist does not commit one either to the materialistic or the spiritualistic interpretation of the cosmos. Things could be quite independent, so far as their existence was concerned, of the mere fact that they were known, and at the same time be created, sustained, and guided by spiritual and teleological powers. Or, on the other hand, everything could be regarded as dependent on some consciousness or awareness and at the same time created, sustained, and controlled according to blind mechanical laws. Subjectivism is in no way incompatible with materialism (in the sense of naturalism, atheism, or mechanism) and realism is in no way incompatible with a spiritualistic, teleological, and theistic view of the world. Epistemological idealism or subjectivism, which is opposed to realism, has no logical connection with cosmological idealism or spiritualism, which is opposed to materialism.

2. To be a realist does not commit one either to an acceptance or a rejection of the soul. Consciousness may be viewed as a mysterious and indefinable leap outward of a soul, or as a natural and definable relation of objects to one another and to the physical organism. In either case it may be thought of realistically as a relation which does not determine the existence of its own terms.

3. To be a realist does not commit one either to empiricism or to apriorism. You may believe that the only source of knowledge is sense-perception or that there are other and higher sources of knowledge, without prejudice to your realistic belief that the objects known may exist independently of the knowledge relation.

4. To be a realist does not commit one either to monism or to pluralism. Your realistic objects, which may exist both in and out of the knowledge relation, may constitute one single organic system (which in turn may be either spiritual or material), or, on the other hand, they may constitute an aggregate of mutually independent entities (which again may be either spirits, or atoms, or anything else).

5. Finally, to be a realist does not commit one either to a static or to a dynamic view of reality. Between the "block universe" of the absolutists and a universe of indeterminate and evolving flux, the realist, as such, is free to choose.

In short, the issue between realism and idealism is, in its essence, perfectly clean cut and distinct from the issues to which we have referred.

And now that realism has been defined, it becomes necessary to define pragmatism in order that we may institute our comparison of each with the other. The defining of pragmatism is no easy matter because, unlike realism, it is a new doctrine, or rather group of doctrines, and it is difficult to find a single formula

that will adequately express its various meanings. Perhaps no great injustice will result if for the purposes of this inquiry we select, to represent the position of pragmatism, four theories which have figured very prominently in the writings of pragmatists, and three of which may serve to signify the three somewhat distinct phases of the movement which have been emphasized respectively by Messrs. Dewey, James, and Schiller. These four theories may for convenience be designated as:

1. Biological pragmatism, or the instrumentalist theory of knowledge.
2. Psychological pragmatism, or the motor theory of truth.
3. Ontological pragmatism or the humanistic theory of reality.
4. Logical pragmatism, or the theory that "The truth of a proposition depends upon [is measured by] the value of its consequences."

I would not be understood as implying that the distinctions here made are hard and fast, or that the classification has itself anything more than a pragmatic validity.[1] Each of our three exponents of "the principle of Peirce" has written much that might be interpreted as a defense of the positions more distinctively associated with his confreres. Professor James, in particular, has defended all of the doctrines under consideration and his general philosophical outlook is perhaps intermediary between the rather naturalistic tendencies of instrumentalism and the rather spiritualistic tendencies of humanism.

I propose in a subsequent paper to analyze in turn and in the order given above each of the four phases of pragmatism with a view to determining whether their several implications are realistic, subjectivistic, or neutral.

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REVIEWS AND ABSTRACTS OF LITERATURE

Some Aspects of Rabbinic Theology. S. Schechter. New York: The Macmillan Company. 1909. Pp. 384.

Jewish theology had been developing until the second century A.D. Since then it has become stationary, and theological studies have con-

[1] It might seem, for example, that there should be added to the above: 5. Pedagogical pragmatism, or the theory that we ought to subordinate our abstract and theoretical to our concrete and practical interests, and that, in particular, our educational curricula should be made to conform more than at present to the personal needs and future vocations of our students. But inasmuch as this is a view of what ought to be done rather than of what actually is, and inasmuch as not every pragmatist need accept it and some non-pragmatists would accept it, it should not enter into our present discussion.

fined themselves to seeking out in the Scriptures a foundation for the theological thoughts hitherto developed. From the time of Rabbi Akiva (A.D. 135) to that of the Hebrew-Arabic philosopher Rabbi Saadia (933) no theological treatise was produced. Different circumstances, such as the birth of Christianity, the separation of diverse gnostic sects, both from Judaism and Christianity, and the strange theological thoughts in which the greatest Tanaits of the second century—as Ben Azai, Ben Zoma, and more especially Elisha Ben Abouja, who rebelled against the teaching of the Rabbis—indulged themselves, have brought about the Rabbinic prohibition of the study of theology, and even the suppression of all theological treatises that were previously written.[1]

The loss of the documents produced during the most flourishing period of rabbinical theology, joined to the difficulty of determining, from among the opposing tendencies of the Talmud, the prevailing opinion which formed an integral part of the religious consciousness of "Catholic Israel," render all attempts at an orderly and complete system of rabbinical theology an impossible task. Many of our modern theological writers seem to be little aware of this difficulty. They construct their systems upon an arbitrary selection made from the sayings of the Rabbis, which, when torn from their context and put into a modern theological treatise, often acquire a meaning which the author could not have intended them to have.

Professor Schechter's treatment of the subject is more sober; there is no forced attempt at a coherent system. It is also more true to the rabbinical spirit than any other treatise on Jewish theology. For our author, having full command of the literature on this subject and having been, as he says, "brought up among Jews who did live under the strict discipline of the law and were almost exclusively nurtured of the spiritual food of the Talmud and Midrashim," thus has the advantage of having a just insight into the Jewish religious sentiment. While the non-Jewish writers, being only outside spectators, commit the fallacy of taking for the whole of rabbinical life and spirit the few glimpses which they catch from a distance. It follows that certain essential aspects of rabbinical theology, such as the joy of the law, which have hardly been touched upon by most theological writers, are fully revealed to us in Professor Schechter's treatise.

From this difference in point of view, as well as from the difference in method, we find that the results reached by Professor Schechter are at variance with those of other theological writings. If we compare, from the standpoint of method, Schechter's treatment of rabbinical theology with that of Weber's, we may say, broadly speaking, that Schechter views rabbinical theology chiefly through Hebrew literature while Weber views it through Jewish history. Viewed through Jewish literature, we have Schechter's system of rabbinical theology, where the Kingdom of God is the central idea, and the law is only looked upon as "a means of strength-

[1] See in the Jeroushalmi, Sabbath, 16, 5, on the prohibition of the study and the suppression of the "Sifre D'Agadetah" which probably were treatises on theology. See Babli, Hagiga 11–16, on the Maasse Mercava and on Maasse Breshith.

ening the mutual relations of love between God and his people." Viewed from the historic standpoint, we have Weber's system, where the legalistic element is predominant, treating first of nomism (or legalism); then of the character of the law, the authority of the Rabbis, etc.; and last of all, of the Jewish notion of God. Weber's arrangement of the subject, though criticized by Schechter, seems, however, to follow the genesis of the Jewish theology which developed not from faith to law, but from law to faith, from action to belief. The characteristic saying of one of the Rabbis, namely, Rabbi Simlai, points also to this development by showing how the six hundred and thirteen precepts delivered unto Moses on Mount Sinai, were successively reduced by the prophets to one: "But the just shall live by his faith."[2] Even in the Decalogue, the rabbinical interpretation of God's first commandment is more legal than theological (see Kouzari, ch. I., 13. Hamizwoth II., I., by Maimonides and Nachmanid). Looking into Jewish history, we find that the ideal Jew is, in the prevailing opinion, indeed, not so much the faithful believer as the strict observer of the law. The infringer of the slightest law is looked upon with more disfavor than the unbeliever. Certain of the Jewish philosophers, such as Bachya, Maimonides, and others, despite the freedom of their philosophical doctrines, were regarded as saints because they were observing the law in its strictest details.

It is, therefore, not surprising that Weber, looking at the rabbinical theology from the Jewish religious history, should mainly be impressed by its legal aspect. Similarly it was natural that Schechter, viewing rabbinical theology mainly through its literature (Midrashic), was impressed by its spiritual aspect. Both views, Weber's legalistic (if by law is meant the performance of religious and social duties, and not mere burdensome formalities and ceremonies) and Schechter's spiritual view, represent alike the spirit of rabbinical theology. They are both different aspects of the whole rabbinical life. The Rabbis are, as represented by Weber on the one hand, and by Schechter on the other, both "tough minded and tender minded"—to borrow James's expression. The Rabbis are neither wholly intuitionists as described by some, nor utilitarians as described by others; they are both at once; they are rather pragmatists. Owing to the lack of a better term rabbinism has often erroneously been identified with legalism to express the practical aspect of rabbinic life. Had the word pragmatism been known a few decades earlier, our theologians would probably never have used the term legalism to characterize rabbinism. For, a deep insight into the rabbinical spirit shows that it is absorbed with questions of practical and ethical import, and not with mere empty formalities, as it is thought by some. That pragmatic tendencies are felt throughout the Talmud is shown by the Talmudic motto used as a test for the validity of every discussion: "Mah-nafke-minoh," which in

[2] With this principle we reach the acme, but also the stopping point, of rabbinical theology. Looked upon by the Rabbis as a dangerous principle, it was soon substituted by the saying of Amos: "Seek the Lord and live," which the Rabbis interpreted "Seek the Lord in the study of the whole Scriptures," meaning by it that the law and the Scriptures are to be at the bottom of all theological thought.

James's language would convey: "what difference would it practically make to any one if this notion rather than that notion were true."

Turning now to the content of "Some Aspects of Rabbinic Theology," we notice that the aim which the author has set to himself throughout the work is to prove that rabbinic theology means "the highest aspirations of the religious man of various modes of thought." The guiding motive in the choice of subjects was in general a selection of those principles in which rabbinical thought and Israel's faith were, according to the author, most clearly represented and yet often misunderstood and misinterpreted.

The book is divided into eighteen chapters. The preface and the introduction discuss the nature as well as the inherent difficulties of the subject. The first three chapters deal with the Hebrew conception of God: (I.) God as Ruler of the world, (II.) God as King of Israel, (III.) Israel as God's chosen people. (I.) God is not remote from the world; (II.) and his relation to Israel is most intimate. (III.) The doctrine of Israel's election is not quite of so exclusive a nature as it is usually imagined, for it is merely the privilege of the first born which the Rabbis claim for Israel. "He is our God by making His name particularly attached to ours, but that He is, also, the one God of all mankind," is the common opinion.

The "Kingdom of God" is treated in its two aspects, the invisible and the visible. Three chapters are devoted to this subject: (I.) the invisible kingdom; (II.) the visible (universal); (III.) the visible (national). The kingdom is invisible and, as such, spiritual and individualistic; visible and universal, as having its locale in our globe, and being for humanity at large; visible and national, as having its realization in and through Israel. The law and the precepts which derive their authority from the kingdom are next treated by the author in four chapters: (I.) the law; (II.) the law as personified in the literature; (III.) the Torah in its aspects of law (Mizwoth); (IV.) the joy of the law. The usual criticism that the law and its enactments have a harsh sound, sinister and burdensome, and are forced upon men by authority from the outside, is aptly refuted. The Jews did not feel that their life under the law was a burden; "just as little as we can speak of Englishmen being under the burden of the law when prohibited from burning their widows or marrying their grandmothers, though these acts would certainly be considered as crimes." Various citations are brought up to prove that Israel did not regard the law as an infliction, but as a source of joy and delight, as "mercy, loving-kindness, and peace."

The remaining chapters deal with the Zachuth (merit, original virtue) of the Fathers, whose righteousnesses are charged to the account of Israel; the law of holiness and the law of goodness; sin as rebellion; the "Evil Yezer" as the source of rebellion; man's victory by the grace of God over the "Evil Yezer" created by God; forgiveness and reconciliation with God; repentance as a means of reconciliation.

Such is a brief survey of "Some Aspects of Rabbinic Theology." To examine all the details would be beyond the limits of this review, as Talmudic interpretation is always a matter of dispute. The work has the

double advantage of being at once useful to the specialist, by the new light which it throws on the subject, and accessible to the layman by its simplicity of style, and by the life and enthusiasm which animate it throughout. While the attractiveness and charming style of the book do not conceal from the careful reader the scholarship of the author, the labor in gathering such a wealth of material, and the scientific treatment of the subject.

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La philosophie sociale de Renouvier. ROGER PICARD, Docteur en droit, Licencié ès lettres. Paris: Libraire Marcel Rivière. 1908. Pp. 330.

The present volume contains a clear, orderly and sympathetic exposition of the social philosophy of Charles Renouvier. Although primarily a philosopher, Renouvier possessed throughout his life a deep interest in political and economic questions. Indeed, as a Frenchman and a direct witness of the events of 1848, he took more than a theoretical interest in such matters; they were for him significant of tragic experiences and urgent national problems. Thus we find him in his "Manuel républicaine de l'homme et du citoyen" (1848) attempting an elaborate justification of the revolution of 1789, and exposing himself to open attack in the Assembly as a socialist. In 1851 he published his "Gouvernement direct et organisation centrale et communale de la République," a criticism of the constitution of 1848 together with a detailed program of reform. The *coup d'état* of 1851 put an end to Renouvier's political activities, but all of his writings reflect that blend so characteristic of French writers, of science and art, of speculative insight and logical disinterestedness, with an aptitude for affairs.

Dr. Picard bases his exposition mainly on the writings mentioned above, together with the "Philosophie analytique de l'histoire" (1864, 1896–1897), "La science de la morale" (1869), "Le Personnalisme" (1903), and various contributions made to *La Critique philosophique* between 1872 and 1889. The scope of the book is naturally very wide, covering Renouvier's fundamental ethical theories, his philosophy of the state and of progress, and his contributions to economics, jurisprudence and sociology. We shall confine ourselves in the present review to a general orientation of Renouvier's social philosophy and a brief critical examination of its ethical basis.

Although easily confused with both, Renouvier was not strictly either a socialist or an individualist. He was a socialist only in that he held it to be the duty of the state to guarantee liberty and justice, and to move in the direction of equalizing economic conditions. But he believed that the latter end was to be gained not so much by the direct interference of the state as by the formation of voluntary "associations." He was opposed in principle to the communistic theory of property, and to any policy looking toward the general subordination of the individual to the state. It is the primary function of the state to secure the autonomy of the individual.

In certain respects, then, Renouvier was an individualist. But he repudiated the doctrine of *laissez-faire,* because he believed it calculated to perpetuate existing inequalities, to intrench vested interests and arbitrary privileges. And he also repudiated the extreme revolutionary individualism, on the ground that it ignored the dependence of the individual's real, or moral, good upon the establishment of justice. In short, Renouvier was an ethical individualist, but not a political or economic individualist; and ethical individualism becomes indistinguishable from ethical socialism, once it is admitted that the individual can realize his true good only under ideal social conditions.

Renouvier can not, then, be classified either as a socialist or as an individualist in *policy.* Indeed his writings on social questions are distinguished mainly by the fact that these questions are for him, in the last analysis, less matters of policy than matters of theory. He is concerned always with the application of an ethical system. Renouvier's philosophical development may be divided into three periods. In the first, he was Hegelian and pantheistic, and inclined to sympathize with Saint-Simon. In the second, he adopted the neo-Kantian position with which he is commonly identified. The third period is marked by the flagging of his critical and speculative zeal, and by his greater reliance on faith. The second period was much the most important, both in relation to his general development and in relation to his social philosophy. In other words, Renouvier's social philosophy in its most original and characteristic form is deduced from a certain version of the critical philosophy of Kant.

Now it must be admitted that Renouvier's philosophy is not a profound interpretation of Kant. He follows neither the logical nor the idealistic leadings of that philosopher, but confines himself to a somewhat naïve and literal restatement. And while Kant proves to be, if not an enlightening, at any rate a fecund, source if construed logically or idealistically, he is otherwise formalistic and barren. This is especially true of the moral philosophy. The Kantian critique of the moral consciousness is illuminating if regarded as a partial analysis of the logic of duty; and it is pregnant (whether legitimately or not I shall not here attempt to say) if interpreted metaphysically after the manner of Fichte and Hegel. But, otherwise, it leads to nothing; leaving us in possession only of a set of terms, like duty, autonomy, freedom, that are mere shibboleths, without definite meaning, and without application to life. The consequences of this formalism appear in Renouvier's handling of every topic. "La doctrine sociale tout entière vise à respecter le droit et la dignité de la personne, à lui donner les moyens de satisfaire à toutes ses fins, de devenir davantage elle-même, c'est à dire un être autonome et raisonnable. C'est essentiellement une doctrine de liberté." But though we are brought back again and again to this "*être autonome,*" we never really make his acquaintance. In order to satisfy the absolute priority of this moral person, the whole process of history must be reversed, and civilization regarded as a lapse from primitive purity. Moral persons create and reform society in order that they may thereby be moral persons.

But of what are moral persons constituted? For what do they live? Wherein lies the virtue of their autonomy? To what end are they free? And what is the relation of this transcendental *noblesse oblige* to the cravings and passions of men, to the moving springs of the natural life, to the whole upward struggle of animals and men?

There is no answer to these questions short of a definition of the moral good in terms of desire and interest. There is a certain dignity and worthiness of respect in Renouvier's uncompromising moralism. But there is no virtue in opposing formalism to materialism. The defect of materialism lies not in the concessions it makes to concrete interests, but in the undue weight which it attaches to *some* interests. It is possible to discover principles that are the very conditions of practical success and failure, but which are at the same time universally valid and unlimited in scope.

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Logique et Mathématiques. ARNOLD REYMOND. Saint-Blaise: Foyer Solidariste. 1908. Pp. ix + 218.

Many writings concerning the relations of logistic and mathematics are obscured by the rigid partisanship of their authors, but the present work is not of this sort. M. Reymond conceives his problem broadly: "Whether mathematics may or may not be considered as a branch of logistic, the solution of this problem would matter little, if it did not involve a more vital question. However remote it may appear to be from reality, mathematics preserves, like reality, a synthetic element, refractory to all analysis—to wit, *le devenir*. . . . It is the autonomy of life in general and of thought in particular that the mathematician defends in refusing to see in numbers and their infinitely varied combinations pure logical constants, *i. e.*, static and mumified elements" (p. viii). The conception of infinity is the strategic point of the defence.

If this book is taken as a criticism of existing derivations of mathematics from logistic, it seems to stand on firm ground. On the other hand, if it is taken as a refutation of Mr. Russell's thesis that mathematics is nothing but formal logic, it is open to question. The accepted "logical constants" may be inadequate, but the list is not of divine origin nor is it as the laws of the Medes and Persians. Neither thinking in general, nor mathematical thinking, exists when there is nothing given to think about; but, in so far as mathematics can limit itself, as pure or abstract mathematics does, to questions of relations between entities wholly unspecified except as to their relational values, logistic, the study of all general types of deduction, ought to give it adequate foundation.

M. Reymond's argument is as follows: The early expressed antinomies of the infinite arise from a confusion of the continuum of pure analysis and that of spacial intuition. "So, for the continuity given in spacial intuition, pure analysis substitutes a numerical continuity, a schema equivalent to the first and one which satisfies all its needs" (p. 117). This is not, however, asserting that the analytic continuum is adequate

to space. Thus "to conclude that two unequal quantities must be equal from the fact that they are indefinitely divisible, would be to suppose that all quantities are equal to each other simply because they are continuous, and this supposition would take away from analysis all possibility of being applied to spacial extent" (p. 128).

But the real test of the adequacy of logistic to mathematics is the definition of the class (*ensemble*) of whole numbers in terms of logical constants. Non-contradiction in the definition is the negative condition of existence. "The presence of contradiction in a concept shows that it does not satisfy the conditions of the existence of its object, conditions otherwise known or laid down *a priori*" (p. 161). "To reduce mathematics to logistic comes then to stating an equivalence between the conditions of existence which are peculiar to the objects of these sciences" (p. 163).

The logistical definition of the whole numbers depends upon the concept of zero and of the null class. "But nothing (numerically) is not nothing (logically), for, if the arithmetical zero . . . is nothing with respect to realized numbers, it is nevertheless a concept which exists for logic like all the others. The logical nothing is then always something; it is a concept which denotes every absolutely undetermined object over against a determined class" (p. 172). The logical zero is, therefore, not a singular class and can not serve to prove the existence of 1, and so the existence of all the whole numbers remains problematic.

The principle of mathematical induction also can not be expressed by way of logical deduction. *All* the finite numbers have not the same meaning as *all* men, for numbers have nothing in common but a law of succession, and are in no sense given when their class concept is defined. The inductive law of mathematics assures the logical impossibility of completing numerical series, *i. e.*, of the existence of *all* numbers, and not merely a practical impossibility. The cardinal numbers, defined as classes of classes, are logical entities, but distinct from arithmetical numbers because they can be applied only to finite classes and no law of succession characterizes them (cf. p. 175).

To define transfinite cardinal numbers, the notion of correspondence must be completed by the principle of induction. Granting this, we find denumerable and non-denumerable classes (ensembles) and Cantor's transfinites can be constructed, but they have only relative significance. To Cantor can be opposed this dilemma: "Either the series

$$\omega, \omega^{\omega}, \cdots, \omega^{\omega^{\omega^{\cdots}}}$$

is always denumerable and in this case the limit Ω would have only the first power; or else this series is not denumerable and in this case we have no right to affirm that it has a limit" (p. 189). The idea of limit depends on that of succession. All the antinomies of the transfinite arise from the assumption of a realized infinite number, which is an impossibility.

As logistic is inadequate to ground mathematics, its task should not be the restatement of mathematics, but it should seek "to reorganize and characterize the indefinables peculiar to each science that the human mind

studies, that is to say, to determine the different conditions of existence, irreducible in themselves, which are peculiar to different groups of logical concepts" (p. 208). It studies the foundations of all sciences in relation to its own.

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Education: An Essay and Other Selections by Ralph Waldo Emerson. Riverside Educational Monographs. Edited by HENRY SUZZALLO. Boston, New York, and Chicago: Houghton, Mifflin Company. 1909. Pp. vii + 75.

The publishers are to be congratulated upon the useful and handy series of educational monographs of which the present volume is the first to be issued. Students of education as well as the general public are likely to be grateful for the reprinting in inexpensive and compact form of classic essays and sayings on education, otherwise scattered through the complete works of their writers or through files of periodicals and educational reports. The series aims also to present in simple and untechnical language discussions of modern problems by educational experts.

This little collection of Emerson's writings on education contains the essay, "Education" from the "Lectures and Biographical Sketches," "Culture in Education," and "Power in Education" from "The Conduct of Life," and "The Training of Manual Work" from "Man the Reformer" in "Nature, Addresses, and Lectures"; as well as a brief introduction by Professor Suzzallo. It surprises the reader by its timeliness, and vindicates anew Emerson's right to the title of seer. Our educational consciousness recognizes almost as commonplaces the maxims of the great transcendentalist, although even now our practise is only beginning to be modified by our theory. In fact, any reading of the great writers on education from Plato down, convinces one that they have always got at the root of the matter. Our contribution is the application of scientific method to the working out and adapting to modern conditions of their high imaginations. In the midst of our engrossment in means and technique it is liberalizing and refreshing to get a view of education as a great human undertaking through such eyes as Emerson's. The same thing might well be done for Carlyle and some of our other modern prophets; it has been done in England, I believe, for Ruskin.

The dominant quality of these selections, as one reads them again from the point of view of modern education, is their human-ness. If Emerson was a philosopher, he was also a shrewd and kindly New Englander of the best type, and he says many things that are both wise and homely. Surely our age, far more than his, needs the gospel that material things must be humanized if we are to consider ourselves educated, must not be scorned or worshipped, but recognized and valued as means to fuller human life. "Victory over things is the office of man. Of course, until it is accomplished, it is the war and insult of things over him" (p. 3). "In some sort the end of life is that the man should take up the universe into himself" (p. 7) "it becomes the office of a just education to awaken him to a knowledge of this fact" (p. 8).

Emerson sees clearly that the school is only one agency of education, and that in its methods it has failed to learn from the more flexible and spontaneous types of education going on outside its walls. "I like boys, the masters of the playground and of the street—boys, who have the same liberal ticket of admission to all shops, factories, armories, town-meetings, caucuses, mobs, target-shootings, as flies have; quite unsuspected, coming in as naturally as the janitor—known to have no money in their pockets, and themselves not suspecting the value of this poverty; putting nobody on his guard, but seeing the inside of the show—hearing all the asides. . . . They are there only for fun, and not knowing that they are at school in the court-house or the cattle-show, quite as much and more than they were, an hour ago, in the arithmetic class" (pp. 14, 15).

He emphasizes the modern doctrine of respecting the individual child and not forcing knowledge upon him before he is ready for it. "I believe that our own experience instructs us that the secret of education lies in respecting the pupil. It is not for you to choose what he shall know and what he shall do. . . . By your hampering and thwarting and too much governing he may be hindered from his end and kept out of his own" (p. 19). "Can not we let people be themselves and enjoy life in their own way? You are trying to make that man another *you*. One's enough" (pp. 13–14). "But books are good only so far as a boy is ready for them. He sometimes gets ready very slowly" (p. 38). He deprecates the haste and false economy of the schools. "Our modes of education aim to expedite, to save labor; to do for masses what can not be done for masses, what must be done reverently, one by one" (p. 29). He believes in letting a boy learn for himself the worth of things, by experiencing them. "One of the benefits of a college education is to show the boy its little avail" (p. 40).

Naturally, Emerson makes of first importance the full development of the individual and has less to say about the welfare of society. But he strikes the modern note when he cries, "Let us make our education brave and preventive. Politics is an after-work, a poor patching. . . . We shall one day learn to supersede politics by education" (p. 37).

And in his discussion of manual work, the topic on which we listen to him most sympathetically and eagerly, he says, "Quite apart from the emphasis which the times give to the doctrine, that the manual labor of society ought to be shared among all the members, there are reasons proper to every individual, why he should not be deprived of it" (p. 67). In these days of hot discussion of manual training, art-crafts, and industrial education, I know of no more illuminating treatment of the cultural value of manual work than this of Emerson's. It can not be quoted, because it should all be read.

It seems a pity that the date when each selection was first published is not given. Otherwise, the editing is beyond criticism.

ELIZABETH KEMPER ADAMS.

SMITH COLLEGE.

Administration of Public Education in the United States. SAMUEL TRAIN DUTTON and DAVID SNEDDEN. New York: The Macmillan Company. 1908. Pp. viii + 601.

Students and teachers of the problems of educational administration looked forward with special interest to the publication of this book; and in the main their high expectations are amply justified. It is the first adequate modern treatment of its field; its scope is wide; and the multifarious facts dealt with are organized and interpreted at once expertly and sanely. Its limitations are due largely to the nature of its subject-matter—to the diversities of usage in our state and local systems, to the fact that we are only just at the beginning of a scientific study of the problems of educational administration, have hardly devised a technique for controlling its data. The writers fully recognize these inherent limitations, but they have also wisely recognized the value of such a survey as theirs at just this stage of development. The book is bound to be of great practical use to those teachers who are forced to deal briefly with the administrative aspects of education and who wish to refer their students to a clear and comprehensive survey; it should also be useful to the intelligent citizen.

The writers interpret liberally the term "administration of education," as the length of the book shows, yet it is difficult to see what topics might justly be omitted. The first group of chapters deals with the various units in American education—nation, state, county, district, town, city, and the relations among them, with special stress upon the problems of city school systems. A chapter follows on the financing of public education; and there are groups of chapters on the schoolhouse and its equipment; superintendence, supervision, and the teaching staff; the supervision and administration of kindergartens and elementary schools, and the problems of grading and promotion; the administration of high schools and normal schools; the administration of special types of education—vocational, physical, correctional, for defective and subnormal children; evening schools, and continuation schools. There are two chapters on compulsory education and child-labor legislation; one on school discipline and government; two on educational statistics; and two brief concluding chapters on the widening sphere of public education and the school and society. At the end of each chapter is a list of references.

After a half-year's experience in using the book as a guide and summary with a class of college juniors and seniors who came to it after considerable class discussion of the topics and specialized reading, I am inclined to think that it is more serviceable for such use than as a text-book. It is both too detailed and too general, too uniform in its effect, to give undergraduates, at least, a sense of the vitalities of modern education. In many respects, it is more suitable for the teacher who already has an interest in education and a background of concrete instance. In the final examination, I asked the class to give me an unbiased estimate of the book, the merits and defects of which I had not discussed with them. While nearly all of them spoke of its value as a labor-saving device and of its candor, impartiality, and logical organization, they also quite generally

characterized it as dry, lacking inspiration, having little life. These are, of course, the sweeping criticisms of the young, yet I believe that they do indicate a real weakness. For my own purposes, I have found most satisfactory the chapters on local units of administration, especially on city school systems, on the various phases of special education, on compulsory education and child labor, and on educational statistics. The reference lists I find disappointing, partly because the materials on each topic grow so rapidly that the teacher must make his own bibliography and winnow the best for his students.

The book throughout assumes the fundamentally social character of education, and shows that the problems of educational administration are only one group among the varied administrative problems of our complex social organization.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. July, 1909. *Le Voluntarisme* (pp. 1–16): DR. SOLLIER. – Confusions as to the significance of the concept of will are the cause of the contradictions and difficulties of voluntarism. This concept needs reinvestigation and a fresh deduction of its consequences. *Du rôle de la mémoire dans les rythmes biologiques* (pp. 17–48): H. PIÉRON. – From the lowest vegetable organism upward there is evidence of a faculty, closely akin to memory, for individual acquisition of persistent rhythms. *Le fait scientifique* (pp. 49–62): J. SAGERET. – Scientific facts are never brute facts and in the course of scientific development they become transformed into mere principles of method. *Notes et discussions,* Gilson: *Sur le positivisme absolu. Réponse de* M. Rey. *Analyses et comptes rendus.* Mentré, *Cournot et la renaissance du probabilisme:* A. PENJON. Ludwig Stein, *Philosophische Strömungen der Gegenwart:* L. ARRÉAT. Bernard Brunhes, *La dégradation de l'énergie:* A. REY. Arnold Reymond, *Logique et mathématique:* A. REY. Julius Baumann, *Der Wissensbegriff:* A. REY. A. Erich Haas, *Die Entwicklungsgeschichte des Satzes von der Erhaltung der Kraft:* A. REY. J. H. Ziegler, *Konstitution und Komplementat der Elemente:* A. REY. Berthold Weiss, *Entwicklung:* A. REY. A. Levy, *Die Dritte Dimension:* A. REY. Roberto Gaetani d'Aragona, *Tutto è Energia:* A. REY. Dr. G. Bohn, *La naissance de l'intelligence:* F. LE DANTEC. E. Cramaussel, *Le premier éveil intellectuel de l'enfant:* L. DUGAS. E. Westermarck, *The Origin and Development of the Moral Ideas:* P. FAUCONNET. *Revue des périodiques étrangers.*

Lefèvre, L. *Essai sur la physiologie de l'esprit.* Extrait de la *Nouvelle Iconographie de la Salpêtrière.* No. 2. March–April, 1909. Paris: Masson et Cie. 1909. Pp. 36.

Del Vecchio. *Il Concetto della Natura e il Principio del Diritto.* Milan; Turin; Rome: Fratelli Bocca. 1908. Pp. 174.

Del Vecchio. *Los supuestos filosóficos de la noción del Derecho.* Madrid: Hijos de Reus. 1908. Pp. 210.

Pacheu, J. *Psychologie des mystiques chrétiens. Les faits.* Paris: Perrin. Pp. 400.

Rausch, Alfred. *Elemente der Philosophie. Ein Lehrbuch auf Grund der Schulwissenschaften.* Halle: Verlag der Buchhandlung des Waisenhauses. 1909. 4.60 M.

Verweyen, Johannes. *Das Problem der Willensfreiheit in der Scholastik.* Heidelberg: Karl Winters Universitätbüchhandlung. 1909. 6.80 M.

Wundt, Max. *Geschichte der Griechischen Ethik.* Leipzig: Engelmann. Pp. 536.

NOTES AND NEWS

An interesting intellectual venture is reported from France, a monthly periodical entitled *Le spectateur,* consisting of about fifty pages in each issue, published by Falque, Paris, and edited by a committee of seven, with Martin Guelliot as Director. Its official characterization of itself is more instructive than its title: "it is devoted to the experimental, abstract, and practical study of intelligence as expressed in contemporary life, scientific and social activity. The July number is the fourth issue, and contains an article by Jeanne Renault on the "Idea of Truth"; and a critical study by Frederick Voss on the "Study of Popular Legends." The prospectus states that there will be an alternation of articles on the logic of language, of the sciences, and on social logic. Some remarks of the editors upon a note received by them from an eminent physician of Paris throw additional light on the hope and ulterior aim of the journal. The scientist in question had written them "that his mind being averse to all the elevated questions of philosophy, he had never studied them; he had put them one side." To which they reply that he as a physician, and all representatives of the professions and arts, have occasion constantly to control their intellectual operations to determine the cause of some accident, or to select means to some end; and that, while modern psychology (in opposition to ancient, metaphysical psychology) has made it clear that unconsciousness with respect to these operations is the usual condition of their exercise, yet certain important ends can best be served by an analytic study and conscious formulation of their nature. Such ends, for example, are the needs of efficient instruction of others in the mastery of the intellectual technique of an undertaking; the coordination, for reciprocal advantage, of the specific logical methods of various arts and sciences, etc. A brief critical note upon Matisse's review of Rey's "Philosophie moderne" also defines the purpose of the journal. After quoting with approval a remark of Matisse to the effect that "general logic, such as intoxicated Kant, is of no use in special sciences, as for example, biology and linguistics—since 'reason' is inadequate to furnish logical principles sufficiently rich to condense in themselves the properties or laws of the environment," the Director adds that the concern of *Le spectateur* is precisely with these "sufficiently rich logical principles"; that it aims to deal with "logical considerations when these are subjected to the special characters of the existence with which

they deal," and to arrange the results into groups which would constitute the different branches of real logic. We may note that while the editors are firm in their adherence to this ideal, they are modest in their professions of ability to realize it; and that while the tenor of the journal is favorable to pragmatism, at least as a methodology (to borrow Martin Guelliot's expression), the tone of the special articles is quite objective. The undertaking is another evidence of the well-known adaptation of French thinkers to the work of popularizing general principles.

THE Winnipeg meeting of the British Association for the Advancement of Science opens at the University of Manitoba on August 25. The council of the Association has invited members of the American Association for the Advancement of Science to become members for the meeting. The educational section will meet on August 26. The discussion of moral instruction in schools, which occupies the first part of the program, will be opened by Professor L. P. Jacks, editor of the *Hibbert Journal,* and continued by Mr. Hugh Richardson, of the Friends School, Bootham, York. Mr. W. M. Heller, chief inspector of science work under the commissioners for elementary education in Ireland, will open the discussion of practical work in schools. To the discussion Dr. K. C. Kimmins, chief inspector of schools under the London County Council, will contribute an account of the London Trades Schools; Miss Lilian J. Clarke, of the James Allen School, Dulwich, an account of practical work in girl's secondary schools; and Mr. W. Hewitt, director of technical education in Liverpool, an account of practical work in evening and continuation schools. At the joint meeting of the educational section with the geographical section of the association for the discussion of geography teaching, Professor R. E. Dodge, of Columbia University, and Professor G. G. Chisholm, of the University of Edinburgh, will be the speakers.

A RECENT census gives the number of foreign students at German universities as 3,921. The number of students was last year decreased to 3,594, owing to the increased severity of the conditions of admission. The increase of this year is largely due to the fact that this is the first summer in which foreign women have been able to matriculate at all the universities. Among the students are enrolled 1,578 Russians, 674 Austro-Hungarians, 306 Swiss, 155 English, 154 Bulgarians, 102 Roumanians, 68 Servians, 60 French, 298 Americans, 175 Asiatics, and 4 Australians. The Universities of Berlin and Leipzig now show the largest enrollment of students.

IT has been proposed to establish in connection with the University of Paris a system of exchange between French and foreign professors similar to that which now obtains between Germany and the United States. The rector of the University of Paris, M. Liard, has made an appeal to create a fund for this purpose. An annual grant of 30,000 francs for three years has been placed by M. Albert Kahn at the disposal of M. Liard for the University.

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CONATION AND MENTAL ACTIVITY. I[1]

THIS article owes its existence and inspiration to Professor Stout's paper on "Conation and Mental Activity," in the *British Journal of Psychology,* Volume II., Part I.—*Mais je suis plus royaliste que le roi.* He seems to me at times to concede too much. But it would be altogether an error to suppose the main purport of my discussion to be critical. It is conceived rather as illustrative than as critical. As an old pupil of Professor Stout's I follow in one or two issues what I had always understood, perhaps erroneously, to have been his teaching rather than the verbal expression given to his views in the valuable paper which I have taken for a text.

I. What does Conation Imply?

1. *The Simple Conation.*—Dr. Stout thus describes what he appears to regard as the simplest state of conation. His words are: "There is the knowledge or thought of a certain actual situation and of a possible alteration in it; and the alteration is not only thought of but also wanted. This is sufficient to constitute what I call mental activity or conation."[2] But are not these things more than sufficient? May not a conative state be simpler than this? Dr. Stout describes for us a highly developed and complex state. It possesses definite intellectual characters, namely, a particularized element of change within a total situation regarded as relatively permanent, and is really a state of desire with a rather well-defined aim.

To me it seems necessary to include among conative states, not only such highly developed complexes as this, but those "felt tendencies" which appear to accompany any biologic trend, even when end, and aim, and want, and wish, have, for the individual in question, never emerged into conscious life at all. As an illustration, consider the case of a young man falling in love—a normal person, not "sicklied o'er with the pale cast of thought," nor rationalized

[1] This paper was read before the British Psychological Society on November 14, 1908. The lecture form is preserved.

[2] *British Journal of Psychology,* Vol. II., Pt. I., p. 2.

into supermanity. The onlooker sees the signs and tells him he's going to fall in love. He rejects the imputation with contempt; he has not been comfortable of late, that is true; but "Fall in love! He! With girls!" Here we have no thought of a present situation with a possible alteration thought of and desired. The tendency is toward an end, not only not thought of, but actually rejected when suggested. Not, however, rejected when the appropriate stimulus appears. The reaction is swift and sure. The reader will see, doubtless, that I have given an instance which, if the analysis be correct, will stand for many cases of instinctive conative tendencies in their early stages.

To speak of "felt tendency" may seem clearly to indicate an end or aim. But, in these early stages of instinctive activities, the aim is not defined except for the onlooker. Swiftly comes the rejoinder, "Then why speak of tendency at all, how do you know of any such tendency; and how, above all, do you know that feeling is, involved?" The tendency can be measured, roughly, it is true, by the resistance manifested when the animal is forcibly shifted off the track. At least, a tendency can be inferred. That feelings may be involved becomes obvious to any one who tries to do it. One would infer them, of course, from the animal's movements or other activities, in the same way as one may infer those of one's philosophic friends.

And passing higher up the evolutionary scale of conative states, we come to those in which we dimly cognize an aim or end, but it is seen vaguely; "we follow a light that never was on sea or land;" it is hardly yet a thought of a certain actual situation and of a possible alteration in it. Conative states need not, in my judgment, have a defined intellectual element any more than an emotion need. The latter we know, from everyday experience, often loses strength in proportion as it becomes particularized to a definite issue. H. S. Merriman says somewhere, "Surely the hell of the coward will be a twilight land of vague, shadowy dangers, ever approaching and receding"; and G. P. R. James, "It is uncertainty which gives its sting to dread." And the same writer, speaking of a heroine in distress, writes: "We must not say she thought either of her situation at the time, of the past, of the future; for there was nothing like thought in her mind. It was all despair." And who supposes for one moment that when Keats was distilling the crudities of his pessimism into the fragrant essence of his verse which describes this world as one

"Where men sit and hear each other groan,
Where palsy shakes a few, sad, last grey hairs,
Where youth grows pale, and spectre-thin, and dies,
Where but to think is to be full of sorrow
And leaden-eyed despairs;
Where beauty can not keep her lustrous eyes,
Or new love pine at them beyond to-morrow,"

this process of defining his grief by giving its reasons was other than an amelioration of his sorrows. Even for us who read, pessimism so well expressed is apt to be without poignancy.

We are pleased *before* we know what pleases us: we rage and kick the table because we have scalded ourselves with the tea: we throw a book away because we dislike its contents, feeling some satisfaction in damaging its appearance and heedless that we may be thereby promoting its circulation. But when we know exactly what it is that has upset us and can fasten our attention exclusively on that, and especially when we can also decide what to do in consequence, the mental state is resolved into one much less dominantly emotional. As emotions are particularized and made definite by experience, so our undeveloped conations, our inchoate strivings toward we know not what, become defined and specialized; vague craving becomes open-eyed desire. We know better what we want. When we know precisely what we want we are said by others to be matter-of-fact persons with no hopeful cravings at all, and there is truth in their view, for the complete organization of the tendency throws the conative aspect out of sight; it is rarely present in consciousness as such.

And passing from these instances in which introspection must supply our evidence, let us consider some of the general conative states the strength of whose "felt tendency" is well known, namely: those in which religious or political ideals are involved. The kingdom of God for which we strive has never yet been within us. If we build it at all, we shall build it better than we know.

"The hand that rounded Peter's dome,
And groined the aisles of Christian Rome,
Wrought in a sad sincerity;
Himself from God he could not free,
He builded better than he knew."
The Problem—Emerson.

A socialistic debater the other day in answer to questions as to details of reconstruction said, "We are not provided with a cut and dried scheme, we simply preach the social revolution." And if action is to depend upon the satisfaction of great waves of tendency in the masses of the people, there is no doubt that the answer was psychologically wise. As Burke says, "Reformation is one of those pieces

which must be put at some distance in order to please. Its greatest favorers love it better in the abstract than in the concrete.'' This was said, doubtless, with a view to disparaging reform, but is, of course, equally true of all human effort guided by an ideal of any kind.

Ideals are always

> "The desire of the moth for the star,
> Of the night for the morrow,
> The devotion to something afar."

We need not say with Virgil, *Omne ignotum pro magnifico;* but we must admit that the unknown that is desired enthrals us more than when it becomes less novel and better known. Exact definition seems to damp enthusiasm and discourage activity. The young man wants more intensely than his seniors, though he does not know so well what he wants; the ''felt tendency'' is stronger though less defined.

It is not, however, enough to feel strong tendencies and ardent longings, nor even enough to arouse huge waves of almost formless enthusiasm in ourselves and others. If conations are to work themselves out to an end, intellective factors become many and various and complicated. The politician who supplies sweeping and emotional generalizations for the public platform becomes in the committee room hard, logical, and greedy for facts; as, indeed, he must be, if any advance whatever is to be made towards the gratification of the hopes he has been raising. But the driving force, the essence of the conative state, resides not in the detailed intellectualizing of the committee room, but in the vague enthusiasms of the party.

Thus far, then, I have tried to show how, both individually and socially, conation may be a much simpler state than that intellectualized complex with which we started and that, as ''felt tendency,'' it is apt to be stronger when less clearly defined.

2. *The Complex Conation.*—But, obviously, it is unsatisfactory to consider conation only on its lower levels; the sporadic, excursive, vague, and jerky strivings of the youth develop into the organized passions of the man, as Mr. Shand has recently shown. A conation now may include so much, that its defeat may involve even the overthrow of that arch-conation, the will to live. It is said truly that ''all a man has will he give for his life''; but he will give life itself for something he has not. ''If success is no longer possible then all this laboriously acquired knowledge is in vain, nor can I find a joy in life if this goal be gone. ' Labor is its own reward,' it is said. But my labor is now as futile to me as gold to a miser when it has lost its purchasing power—the joy has gone out of it.'' In such wise speaks the man whose master passion is realized as futile. If such states as these are conative states they will obviously be as complex

as mental life itself, but they are still conative; they possess the same characteristics as the blind unconscious trend of the instinct-driven animal; they are tendencies and they are felt. The great majority of our conative states are, however, not as highly organized as this. I may know I have a tendency to drink and therefore try to avoid public-houses because I have also a tendency to be a respectable person. I want both, but I want the latter more than the former, and I will the latter and never the former; but the conation is not extinguished, though defeated; the uncertain gyration of my legs is evidence of struggle when my orbit nears an alcoholic star.

Conation, then, though it need not imply the apprehension of an existing situation, the thought of a change in it, and the desire for that change, may involve all these things. But this complex errs by defect; it is not yet conative; it must include the tendency toward the goal. Hell, it is said, is paved with good intentions, wished-for changes which are non-conative. But if the tendency is there, I argue that conation is present, though the defining intellectual factors are absent. And there is a further justification for a usage of the term which requires no complexity of elaboration before it can be applied. If we have the thought of the existing situation, the change in it, the desire for the change, and the movement toward it, we have something very like voluntary decision after comparison. And it would be nothing short of calamitous, after the word "conation" had supplied us with a term to describe so much wilfullness with so little willed decision, that we should be shunted back again and told that conation implies all these characteristics of voluntary choice.

II. Conation and Activity

1. *Does Everything Affect Everything Else?*—What are the grounds for describing conation as mental activity? Dr. Stout says, "Plainly no finite process can claim to be called an activity unless it counts as a factor in determining other processes," and then falls back on the principle of the unity of the universe, which is that every state or process plays a part in determining the nature of other states or processes. Our conations are processes of some sort, therefore they must in some way be effective because everything affects everything else. That, as I understand him, is his argument. Of course they need not be successful to be effective, that is, to be active in Dr. Stout's sense. A locomotive runs, though only for a smash, even if it is off the rails—"it counts in some way as a factor in determining the course of events." But is it not arguing, as it were, backwards to assert activity on the basis of the all-togetherness of the universe? Is not the work of science, psychological and otherwise, just the very investigation into the extent of the truth of the as-

sumption or postulate, here called the principle of the unity of the universe?

We try to find out whether, between the identifiable things and processes of the world, material and mental, the principle here postulated is true. We try to find, that is, the uniformities, the positive and negative correlations, and the indifferences between these constituent parts and processes. Must we count everything as operating on everything else? On the contrary, if we were not able to say "That does not matter" to most of the actual conditions which the world presents, we should never work a successful experiment at all; we rule these things out and say they are irrelevant. They *may not be,* it is true; but we can not get on without in every case deciding that many things are irrelevant; and, moreover, we think we can show in specific cases that they are so. I am aware that it is asserted that, without a postulate of efficiency, that is, without an *a priori* belief that everything does affect everything else, we should not investigate at all, and I shall be told that there is a school of investigators, who, fixing upon *any* two measurable elements in the universe, can show whether they are connected or not by certain ingenious formulæ, and that these workers would not measure all and sundry in this way if they did not suppose a possible connection. It turns out, however, in practise, that this school of investigators, like other people, limit their investigations and employ their formulæ only upon elements which common sense and ordinary experience lead them to suppose are probably connected. For example; a man may spend his time very profitably in investigating the degree of correlation between insanity and the use of alcohol, or size of body and mental proficiency in man; he will not, ordinarily, occupy himself with the relation between, let us say, the variation of imagination in school-children and the variation in the length of the antennæ in certain insects; nor, shall we say, with the position of the herrings in the Atlantic and the proposed sites for Billingsgate Market. Yet, if the only connections we know are established by correlation formulæ, and if we really work on the postulate or principle (I double the term to give no offense to opposing schools of philosophy) of the unity of the universe—that every thing or process affects everything else—such an investigation would be perfectly justified.

Conation, if it is to depend for its title of *"active"* upon a metaphysical postulate that every process is so, will, I think, find great difficulty in establishing its right to the name.

Though he accepts the postulate or principle (which I do not), Dr. Stout feels that conation, though a process and therefore active, can not, because of this, be called *mental* activity. This consideration brings us to the next step, where, if I understand him rightly,

I am only presenting from another point of view what Dr. Stout elaborates in his second section.[3]

If "felt tendency" is a myth, if it is neither causal in nature, nor indicative of causes in nature, then the only basis for the human sciences, as well as for the physical sciences, is in precisely that correlation of measurable elements which we just adverted to. But is this so? If I wish, for example, to be convinced that price rises with demand when the supply remains fixed, I can do this by noticing the changes in my own mind when an increasing number of people want what I alone can supply, say the pleasure (if any) of my company. I could probably arrive at a similar result by noticing the proportion of refusals and acceptances as my total invitations increased or decreased. A careful man will quantify his rough introspective estimates by keeping records; but he will have no doubt as to what is the cause of his rising price; he will, indeed, feel his price rising as he receives the additional invitations, a feeling which involves a tendency to refuse the less attractive ones. These "felt tendencies" are, indeed, the bases of the classical political economy and are the foundations, the more irrefragable foundations, of the human sciences: they constitute its superior certitudes. But can these be trusted by themselves? Do they not provide us with the alarming variations in the human sciences? For I do not mean that I am straightway to be sure that my own state of mind is a microcosmos which reflects the same thing in the rest of mankind. I can not incontinently, like a religious reformer, proclaim my own state universal; others may not be like me; and, if they are not, they will not, especially if they belong to the same learned society, allow me to put my "felt tendency" forward as if it were theirs; they all know something about it; they carry the material of the science about with them, and do not absorb it through the medium of definitions as if it were, say, mathematical physics.

2. *What is the Test of Activity?*—Let us turn back for a moment to the commencement of the last section. The argument ran as follows: there can be no activity without efficiency, and efficient here means having a determining effect upon other processes, and is not, as in ordinary speech, limited to successful action. Either, then, there may be mental processes which are not active, or all mental process must, in some way, be effective. True, the most careful introspection might fail to ascertain this and so it was asserted that we must fall back upon the principle of the unity of the universe.

I have tried to show, whilst believing firmly that conation is a mental activity, that to base a proof of it on this general ground is far from satisfactory. Nor is it really relied on by Dr. Stout. We

[3] *British Journal of Psychology*, Vol. II., Pt. I., p. 3.

need more than this to characterize mental activity, and he goes on to state that it must be a tendency. With this account as descriptive of conation I heartily agree, differing only in believing that we can have conative tendency with little intellectual activity and, indeed, without any distinguishable intellective element at all.

There is always a danger that we shall slip unawares into everyday usage, which tends to restrict the term mental activity to intellectual activity. It certainly seems that, in this sense, there may be much activity without conation; the intellect may play vigorously, but there may be no desire to come to a conclusion, and there may be complete indifference as to what the conclusion is. And, on the other hand, there may be a strong conative tendency with little, if any, intellectual movement. And these two states may even exist in the same mind at the same time. Such a condition is admirably described by Anthony Hope in "Phroso." The hero is in great danger. He thus describes his own mental state: "Then I was off, far away, to England, to my friends there, to the gaiety of London now in its full rushing tide, to Mrs. Hipgrave's exclusive receptions, to Beatrice's gay talk and pretty insolence, to Hamlyn's gilded dulness, in rapid survey of the panorama that I knew so well. Then I would turn back to the scene I had left, and again bid my farewell under the quiet sky, in prospect of the sea that turned to gold. So I passed back and forward till I seemed myself hardly a thinking man, but rather a piece of blank glass, across which the myriad mites of the kaleidoscope chased one another, covering it with varying colors, but none of them imparting their hue to it.

"Yet all this time, by the strange division of mental activity of which I have spoken, I was crawling cautiously but quickly up the mountainside, with eyes keen to pierce the dusk that now fell, with ears apt to find an enemy in every rustling leaf and a hostile step in every woodland sound."

Psychologists, though ordinary language will tend to make them, like other people, confuse mental activity with intellectual activity, will be quite sure that the mind is a feeling mind, and a mind that wills as well as a mind that thinks; and that we can quite as well speak of mental activity as applied to willing and feeling as we can as applied to thinking. They may, perhaps, not so readily admit that, genetically prior to these distinctions, the mind is a conative mind which strives or, as this is too introspective a word, tends. Is this tendency an activity? If we take an external view and decide that activity is defined by result, I suppose there would be few biologists of to-day who would not assert that these native tendencies are the most effective things in life, and we each of us know how hard it is to overcome them either in other animals or ourselves. Moreover,

common experience of the world tells us that it is the intensely conative person rather than the man of merely abundant thought or emotional plenitude who wins his way and affects his generation.

But some conations are defeated, at least in this sense; are they active then? Yes, if we can show that other things or processes have been affected. But, if we can not? Then, from the external point of view, we should be wiser to assert nothing. And it is from this point of view that the dispute is of real importance. Introspection may, and does, put us on the track; but it is not enough to follow the path mentally, we must show others where it is and what it leads to. Though, therefore, I incline to the opinion that the experience of our own conations is entirely responsible for the conceptions of activity as applied to the material elements of the universe, it seems necessary, if these conations are to be regarded as agencies—things which affect other elements in the universe—that we should adopt our usual methodology to discover whether they are, or are not, causes, that is, whether they are active in a scientific sense.

But what of the intellectual play which is not conative? Is this an activity? Yes, if it can be shown to be effective, since this is the test we are adopting. And common introspection somewhat bears out this view. "What are you doing?" we ask. "Oh, nothing," is the answer; "just dreaming." Now dreaming is at least relatively, if not wholly, detached from conative thought, though there may be involved an abundance of ideas and images. Moreover, when we ask how a person is getting on with his studies, we do not mean to ask how many intellectual coruscations he has in mental view, but how far he is producing certain effects, mental or otherwise.

It seems to me, on the whole, that we should regard conation as active apart from the shifting intellectual elements which successively define it, and apart from the emotional accompaniments which cluster along its pathway to success or defeat. To me, indeed, activity or effectiveness is the very essence of the conative state.

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MAY A REALIST BE A PRAGMATIST?

II. THE IMPLICATIONS OF INSTRUMENTALISM[1]

IN the previous paper, realism was defined as the theory that objects that are known are in no way dependent for their existence upon the fact that they are known. Pragmatism was defined as the composite doctrine comprising (1) biological pragmatism, or the instrumentalist theory of knowledge; (2) psycholog-

[1] For the first paper of this series see this JOURNAL, Vol. VI., p. 460.

ical pragmatism, or the motor theory of truth; (3) ontological pragmatism, or the humanistic theory of reality; (4) logical pragmatism, or the theory that "the truth of a proposition depends upon the value of its consequences." In the present paper, we are to analyze the first of these four phases of pragmatism with a view to determining whether its implications are realistic or subjectivistic.

In Schopenhauer's "The World as Will and Idea"[2] occurs the following passage: "Thus knowledge generally, rational as well as merely sensuous, proceeds originally from the will itself, belongs to the inner being of the higher grades of its objectification as a mere μηχάνη, a means of supporting the individual and the species, just like any organ of the body. Originally destined for the service of the will, for the accomplishment of its aims, it remains almost throughout entirely subjected to its service: it is so in all brutes and in almost all men." If we substitute for Schopenhauer's single cosmic will, with its tragically mistaken aim at self-realization, the concrete organisms in situations in which their needs and desires are for the moment in conflict with one another and with their environment, we could take the above passage as a tolerable formulation of the instrumentalist theory of knowledge. When desires, by reason of their complexity, are no longer able to secure immediate and automatic satisfaction, knowledge and thinking are evolved and by natural selection preserved as new and useful instruments of adaptation to environment. Now without raising, except incidentally, the point as to the truth of this theory[3] I wish to ask three questions concerning it: (1) Does it presuppose an objective world which exists independently of our cognitive experience of it, and which antedates that experience? (2) Does it make necessary any new and subjectivistic type of criterion for evaluating the truth of a judgment? (3) Does it restrict the legitimate application of our thought to the subjective realm of desire and experience? The answer to the first question must, it seems to me, be a very emphatic affirmative. Not only have the instrumentalist's concepts, such as "environment," "organism," "evolution," "natural selection," no meaning except as applied to a real world of material objects, but the very notion of thought as having evolved as a useful instrument or organ of adaptation implies the prior existence of that world of thinkable objects to which thought is adapted. Eyes would

[2] Haldane and Kemp's translation, p. 199.

[3] This view of the origin of thought seems to me to be true except in so far as it overlooks the part which the environment plays in forcing itself and its specific qualities upon our notice, oftentimes independently of, or even in direct antagonism to, our needs and desires. Truths are sometimes achieved by us, but at other times they are thrust upon us.

be of no use, and would never have evolved, unless there had existed light. Wings would never have evolved unless there had existed air. An instrument such as an axe would never have been invented and continued in use except in a world which contained things to chop. How then could thought with its categories have originated and developed as an increasingly useful instrument unless the world contained thinkable objects and relations? And unless things *were* pretty much what we think them to be, why should it be useful to think of them so? Why should it be useful to think of the world as a system of bodies and events extending indefinitely in space and time far beyond the scope of any finite experience, unless there was such a world? In short, the more earnestly we pursue the analogy between the faculty of cognition and a biological organ or instrument, the more clear does it become that *the only conceivable basis for an idea or a belief being generally and permanently useful,* is *that it is true*—true in the realistic sense of conforming to or pointing to a reality that is in no sense created by it. If ideas or beliefs created their objects, the process of thought would be arbitrary; one belief would be as useful, or rather as useless, as another. In short, instrumentalism interpreted ontogenetically and phylogenetically not only presupposes the most thoroughgoing type of realism, but it furnishes a new and powerful argument against subjectivism. For if there were no other way of determining whether the objects which we experience existed, and existed in a very specific and determinate manner, when we did not experience them, the mere fact that the assumption that they do so exist is useful and helpful to us in satisfying our needs, would, in itself, afford a powerful presumption in favor of its truth.

But now when we ask the second of the three questions proposed above, the realistic implications of the instrumentalist theory of knowledge may not be so plain. Does this theory of the origin and evolution of thought afford any new criterion for evaluating judgments as to their truth or falsity? I confess I am unable to see how the knowledge that an instrument is useful can throw any light on the problem of how to use it. The way in which an axe should be used is determined not by the fact that the axe was made for use, but by the properties of the wood which we desire to chop. Again, the way in which an optical instrument should be used, whether it be the eye itself or a telescope, is determined entirely by the laws of light. Our needs and desires do indeed tell us *where, when,* and *how much,* to use our instruments, but the *how* is always determined by the nature of the objects upon which the instrument is to be used. Admitting that thought originates as a means of removing the obstacles that balk our desires, the way in which thought does this

is thought's own business. To say that the criterion of truth is the satisfaction of desire would be like saying that the most useful way to use an axe was to use it usefully. Thought is useful because we can adjust ourselves better to the present immediate situation if we know something about other situations. We can satisfy the needs of future situations more surely if we think out what those situations will be; and we can do this only by recalling and analyzing past situations. But the objective nature of what we desire to think about, always has and always will constitute the sole clue to determine how we should think about it. If the situation which I need to think out is a conflict of my own desires and hopes, why then the efficiency of my thinking is measured by the extent of my knowledge of the nature of those desires and hopes. If I am thinking about concrete situations, the truth of my judgments will be determined by the extent to which they conform to the nature of those concrete situations. If I wish to think about something abstract, such as the properties of space or number, the truth of my ideas is entirely determined by the nature of space or number.

There has been much said in the name of pragmatism about the "abstractness" of intellectualistic logic, by which is meant, I suppose, the tendency to forget that any given thought activity is always directed to a given situation and controlled in its procedure by the nature of that situation, and that, consequently, there is no such thing as thinking *überhaupt*. But the same sort of caution might be given, with at least equal justice, to any one who, in the name of pragmatism, should treat of desire or need or activity *überhaupt*. Our beliefs and judgments, considered as instruments, are valuable or true in so far as they satisfy needs, not "needs in general," but rather the specific needs of knowing certain facts at certain times. And the only ways to test the value of judgments are the two that have always been recognized by the old-fashioned logic. We may (1) test the truth of a judgment by comparing the fact which it asserts with the same fact as directly experienced, which is the way of inductive verification; or (2), when the fact asserted by a judgment is not directly experienceable, we may test the truth of the judgment indirectly by ascertaining its consistency with other judgments whose truth has been tested previously, which is the way of deduction. I can see nothing in the instrumentalist theory of the nature and origin of thought that would overthrow or even supplement these well-known criteria of testing truth.

But now for our third question: Does instrumentalism restrict the application of human thinking to the subjective sphere of our desires? Does the fact that thought always originates from the need

to satisfy some desire determine in any way what it is that is thought about? Stated in this way, the question answers itself in the negative. Men desire all sorts of things, some of which are objective, and some of which are subjective; and they desire the same things now for an ulterior purpose, and again for no ulterior purpose. I may desire to know economics for no motive other than curiosity; to gratify my need, I shall have to think and study economic facts and laws. Or, again, my desire to be a philanthropist may be the reason for my study of economics. Or my study of economics may be motived by a desire to make money by teaching it, or by a desire to speculate more successfully in stocks. Any one of a hundred different motives may lead me to exercise my cognitive faculties in a given direction. But the fact that thinking is always to some purpose, and is an instrument for the achievement of that purpose, throws no light at all on the sphere and scope of thought. But, it may be said, I am taking desire, need, and purpose in a far broader sense than they are intended. Granting that thought may now be used as a means to any and all purposes, it originated only from practical needs, and hence the type of situation which in the first instance called it forth will, or should, determine its future application. But to this it might be replied that all evolution is rich in cases in which organs or instruments outgrow their original uses and functions. Almost every organ that satisfies a previously existing need calls into being new needs whose satisfaction is to be got by new uses of the organ. In social evolution the institutions which man created, end by in large measure creating him. If art or religion, for example, could be shown to have had a purely practical origin, it would be no indication that their later functions either are or should be primarily practical. The advent of the thinking habit makes of man a new being, a thinking being, and no longer merely a practical being. Theoretical curiosity as to the nature of the world becomes emancipated from the practical needs which engendered it. Man no longer has merely the need to live, he has also the need to know. Indeed a new means of adaptation may easily become the dominant and controlling interest, and what was originally the end get to be, in its turn, merely a means for the realization of the potentialities of the new instrument. In the case of thought and reason this seems actually to have come about. Man began to think in order that he might eat, he has evolved to the point where he eats in order that he may think. By which I mean that what is most distinctive of human life is the subordination of the physical needs of the animal organism to the fulfillment of the entire system of intellectual, esthetic, and spiritual aspirations. To assume that the use and purpose of a function are limited by the motives which originally called it forth,

is counter to the whole trend and meaning of evolution. To deny the legitimacy of abstract problems or problems about the nature of the universe, on the ground that thought made its first appearance in racial and individual life as an instrument for solving very concrete and very practical problems of conduct, is like denying that we should use our fingers to manage a pen or to play a musical instrument on the ground that fingers originated from the peculiarly arboreal needs of our animal ancestors.

Thus we have seen that whether we interpret the "needs" from which thought is supposed to have originated in such a general sense, as to imply simply that all thinking is purposive, or whether we interpret those needs as distinctively practical—in either case the instrumentalist theory of the genesis of human knowledge can throw no light whatever on the canons for correct thinking or on the proper sphere and scope of our cognitive interests. The instrumentalist theory is probably, in large measure, true; it is, at any rate, interesting, and it illuminates in a remarkable manner the historical development of our categories. It is a much-needed corrective of the over-intellectualistic psychology which conceived all forms of human experience as confused or degenerate products of a primordial reason, or transcendental ego, capable of functioning *überhaupt*, and of generating the world of space and time. Instrumentalism is, in fact, the courageous application of Darwinism to the highest of all life, the life of reason. But to regard it as having any special relevancy either to logic or to epistemology is, it seems to me, to misinterpret profoundly the relation between the problems of genesis and the problems of method and goal.

The question: "May a realist be a pragmatist of the biological or instrumentalist type?" may then be answered in the affirmative. A realist may be an instrumentalist, and an instrumentalist must be a realist; for to think of thought as an instrument of adaptation to an environing world, while denying with the idealist the preexisting reality and independence of that world, would be either self-contradictory or meaningless.

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DISCUSSION

PROFESSOR JAMES ON CONCEPTION

IT is related in the biography of Clerk Maxwell that from early childhood his interest in the mechanism, the "how," of any object was always the first thing with him. "What's the *go* o' that?" he would ask continually. And no mere general account would content him. "What," he would ask, "is the *particular* go of it?"

This is the search for conceptual knowledge in one of its simplest forms, but it provides a convenient symbol and metaphor for all such search. The endeavor to conceive has usually been deemed an innocent habit in the philosopher, natural or moral, and Professor James's prohibition of the habit seems at first sight like a command to the inquiring boy, "Go back and look at the thing, but refrain from thinking about it." Why are we to be snubbed in this way? I can not help thinking that Professor James is misled, for one thing, by his own matchless power of metaphor.

It is seldom fair to cross-question metaphors, and Professor James's are so vivid and delightful that one is not tempted to cross-question except when, as in the present case, they lead us to quite specially inconvenient results. But when the inconvenience makes one look back, his conception-metaphors seem to me to be really puzzling from the first. We "lay hold of our experiences by" concepts, he says; we string reality on them; they are extracted samples, or photographs. "To understand life by concepts is to arrest its movement, cutting it up into bits as with scissors."[1] I can only say that I don't think I do anything of the sort, and I don't see how it is done. "Concept" must mean either an act of conceiving or a content conceived. For me, the first is a process or event, and therefore neither a string nor a pair of pincers. The second is an element in presented reality, and that again is not a string, but a current or a nerve—a real thing seen.

It is ill to contend in metaphors with a master of metaphor; yet my way of expressing the facts surely avoids the difficulties of the other way, and therefore suggests that they are difficulties of allegory only. In my account, sensation gives us our first and most elementary seeing or feeling of the experience-stream. The rest—perception and conception and their like—are "seeing what," "seeing how," "seeing into"; they are the unfolding of the bud; the epiphany of the rainbow in the heart of the sunshine. The first shimmer of the stream's surface grows as we look at it into the crumpled silver tissue of crossing ripples and patterned gleams, and deepens into levels whence bubbles rise, and undercurrents that crease the surface above and stir the sand below, and all "the light and sound and darkness" of the stream's heart. This it is to conceive. We come to see not only the glint of the stream, but the make of it, "the go of it." And I no more substitute my concepts for sense-reality than I substitute the undercurrents or the shaping bed for the flash of the surface. Nor do I ever assert that either alone can give the whole truth.

I have two quarrels with Professor James's moral of "back to sense."

[1] *The Hibbert Journal*, April, 1909, p. 568.

1. If words are to have any ordinary meaning, he is surely attributing to sense-experience a richness which it can not have till thought supervenes. It is after all literally true, as Mill and Berkeley teach us, that with the eyes of our body we can not see a man, nor a stream either. We are so much used to extending the meaning of "sight" that perhaps illustration from touch and hearing will impress the truth better. Think of the poverty and barrenness of a succession of touches in the dark, which we can not read off, or interpret, or recognize. Or think of the ear assailed by a continuous meaningless clash of instruments. The listener's "whole experience" is altered, we say carelessly, when he realizes at last that five familiar tunes are being played at once. Perhaps it is, but "sensation" is just our name for *the element which is supposed unaltered.* In so far as the experience changes, it is something more than sense. Relations, says Professor James, are "just as integral members of the sensational flux as terms are."[2] True, for neither terms nor relations, neither notes nor tunes, were "given" us in that clash and blare. They were there for the finding, but it was not sensation that could find them. What is secret in sense gives up its secrets in thought. "Intellectualistic writers of sensation insist that sensations are disjoined only. Radical empiricism insists that conjunctions between them are just as immediately given as disjunctions are."[3] Both are "immediately" given, I agree, but not in sense. Confined to sense, we know sensations neither as disjoined nor as conjoined. Such terms and such relations are revealed when we open our eyes wide enough to see them. "Pure sensation," for such a writer as Green,[4] is surely the unreachable limiting case of experience accepted without any inspection; with our eyes narrowed to a thread's width; with the given confined to the one field and forbidden to expand or reveal itself in other fields. Hence we have neither "One, and then two, and then three," nor yet "one, with two and three," but only "one, one, one," each forgotten as it passes; or rather it is "thus, thus, thus"; or, still more, it is "thu-u-u-u-s-s-s-s—" to the end of the chapter. It is a buzzing which must not expand into "bee."

2. "The immediate feeling of life solves the problems which so baffled our conceptual intelligence."[5] Not at all; it sets them. Let us grant to Professor James that in one sense of the word we are "given" all sorts of things as "integral members of the sensational

[2] "A Pluralistic Universe," p. 279.

[3] *Op. cit.*, p. 280.

[4] I agree with Professor James in objecting to Green's speaking as if our own "combining thought" created relations instead of finding them; as if it "did something" to sense experience, instead of finding in it what sense can not find.

[5] "A Pluralistic Universe," p. 260. *The Hibbert Journal*, p. 574.

flux," just as we are given Mr. Chamberlain in a puzzle picture; still the problem is to find them. We have experience folded; the problem is to unfold it. The "feeling" gives us the going thing; conceptual intelligence seeks for the go of it. The stream runs and shines; but what is that running? How do the currents turn and cross and enfold one another? It shines, but what is *in* the shine and the blue?

It seems to me that in this matter Professor James has misunderstood Mr. Bradley's complaints. Mr. Bradley, I take it, stands with us by the stream of experience, and we indicate to him certain elements, and movements, and directions, and eddies, which we seem to make out in its flow. "Such and such relations, such and such attributes; such natures of time and space." Mr. Bradley's comment is, "A very slovenly piece of work. If those two currents are on one level, as you say, how can their crossing look like that? How can the eddy you trace in that corner throw such a shadow on the sand? Your scheme is right in its main lines, perhaps, but in some ways it is shamefully scamped and muddled. You must learn to see better than this." To which Professor James replies, "But the stream does run."

None of us, surely, are denying the fact of experience. The instruments, we all admit, are blaring in our ears. We, common-sense philosophers, have resolved the noise fairly satisfactorily to ourselves, into our five familiar tunes. Then comes Mr. Bradley to torment us. "Are you sure," he says, "that these are really the tunes you hear? It occurs to me that not one of them can be exactly as you maintain. How can this and that conjunction come in? How can this particular dissonance be possibly rendered in that way? Are you right in reading it as five tunes at all?" When we are thoroughly bewildered with this teasing, Professor James comes to reassure us; and he says, "Thought finds impossibility in tasks which sense-experience easily performs."[6] "With a world of particulars, given in loveliest union—the "how" of which you "understand" as soon as you see the fact of them, for there is no how except the constitution of the fact as given—he asks for some ineffable union—which, if he gained it, would only be a duplicate of what he has already in his full possession."[7] "Never mind the tunes; there is a great deal of noise going on."

One must confess that Mr. Bradley exposes himself rather recklessly to having his point missed, on account of the unexpectedness of his transition from "appearance" to "reality." We know how in a sunny brook the eddies cast trembling but stationary shadows

[6] "A Pluralistic Universe," p. 256.

[7] "A Pluralistic Universe," p. 369.

on the sand at the bottom; and it is often easier to see the shadow than to find the knot or crumple which is the eddy itself—much easier than it is to see the run of the water in the knot.

Now Mr. Bradley, after tormenting us about our careless reading of the make-up of the brook, quite suddenly gives up any attempt to help us with it, and drops down to this fixed shadow-scheme at the bottom. "*Somehow,*" he says, "to cast these shadows, the real water-currents must be thus and thus, though we can not see how they manage it." But the spectator, seeing the speaker's eyes so abruptly turned from the body of the stream to its bed, concludes that in Mr. Bradley's opinion the stream does not exist. "For this philosopher," he concludes, "there is only the surface and the bed; appearance and reality; a fleeting veil of gleams above a stretch of patterned sand."

There are three truths and three corresponding falsehoods in Professor James's texts, and every one of them can, with a little straining of the reader's eyes, be found in the works of Mr. Bradley.

(*a*) "Do not," says Professor James, "condemn reality as soon as you find difficulty in seeing how it works. Be modest, and doubt whether you have seen rightly." This is a gentle statement of Mr. Bradley's judgment, which is, "Your seeing is that of a sloppy-minded imbecile." They join in condemning our poor attempts at interpretation. "Dried specimens"; "bits cut with scissors," says Professor James; "an unearthly ballet of bloodless categories";[8] "a spectral woof of impalpable abstractions," says Mr. Bradley. True it is that we must be modest; the falsehood lies in denying that we have reached any reality at all.

(*b*) Professor James says: "Get full data. The only way in which to apprehend reality's thickness is either to experience it directly by being a part of reality oneself, or to evoke it in imagination by sympathetically divining some one else's inner life."[9] "If you are to make out the tunes rightly, you must open your ears to the whole volume of sound." True, and most valuable. The falsehood only comes when he tries to maintain that the data are the solution; that to see the stream is to see its make, and to hear the noise is to hear the tunes. In being myself I get my own experience in full, but how closely it is often folded, how undiscovered are its treasures, how little of its thickness do I apprehend! How seldom, in short, can I see the go of it and of me. Mr. Bradley's share in this truth is obvious. His share in the falsehood is, I think, more seeming than real, but those accuse him of it who object to his "it must be and can be, therefore it is." This, they say rightly, but I believe irrelevantly, is no sufficient answer to "*how* is it?"

[8] "Logic," p. 533.

[9] "A Pluralistic Universe," pp. 250, 251. *The Hibbert Journal*, p. 571.

(*c*) "Here, then, inside of the minimal pulses of experience, is realized that very inner complexity which the transcendentalist says only the absolute can genuinely possess!"[10] This is exactly what Mr. Bradley says about feeling,[11] and the truth and the danger are the same in both. Only Professor James seems to me to make the mistake which Mr. Bradley is only accused of making; a failure to distinguish sufficiently between the folded and the unfolded unity.

Professor James returns to feeling in petulance, Mr. Bradley in despondency. "These matters are too high for us," the latter writer seems to say now and then. "All our guesses are wrong; we can not see how things are; let us cling to our knowledge that they are. Truth beyond this seems unattainable." This has usually been put down to Mr. Bradley's agnosticism. Would it be unjust to take the other position as a result of too violent pragmatism? "We make truth. We make it very badly and with difficulty. Let us give up making it."

I have tried to write from the standpoint of those who conceive that reality does not wait for our thinking to make it, but that the discovery of reality does; that some discoveries can be made; and that it is the duty of philosophers to go on trying to make them. And in spite of everything this is presumably the real standpoint of all of us.

HELEN WODEHOUSE.

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REVIEWS AND ABSTRACTS OF LITERATURE

Spinoza's Short Treatise on God, Man, and Human Welfare. Translated by LYDIA GILLINGHAM ROBINSON. Chicago: The Open Court Publishing Co. 1909. Pp. xxiv + 178.

There is something perennial about Spinoza. The interest in his philosophy never completely dies. It may wane in one decade, but in the next it revives, and that is as might be expected. For Spinoza ranks with the great men of the world who have grappled with being in its entirety, "who saw life steadily and saw it whole." The lonely Jew of Amsterdam is the high-priest of pantheism, and only in a less degree than Jesus of Nazareth he is the prophet of catholicity. That which distinguishes pantheism from other systems of thought is its comparative freedom from any limits of race, clime or age. It has been, for the most part, the dim background of all religions; it is the inspiration and note of the noblest poetry, and if not the starting-point, it is at least the goal of all modern philosophies.

Thus Spinoza, though the child of the Orient, has found a home in the Occident, and has a fascination for and an affinity with all ages and all

[10] "A Pluralistic Universe," p. 284.

[11] "Appearance and Reality," pp. 520–522.

kinds of men. Lessing and Goethe, Novalis and Heine, are among the poets of Germany who have frankly acknowledged his influence; while of the philosophers, nearly all the moderns, with the exception of Kant—Fichte, Schelling, Hegel, Schleiermacher—are indebted to his teaching. Nor is it only in Germany that his spell has been felt. If, in France, the School of Cousin was hostile, more lately men like Janet and Renan have been sympathetic, and to-day Spinoza is receiving his meed of attention from the most vigorous thinkers. In Britain and America, though for a time Spinozism was less cultivated than in Germany, France and Holland, there is not wanting evidence that it has not been altogether an unknown or negligible factor in literature and thought. Coleridge, who did so much to transplant the fruit of the great German revival of culture to English soil, was the first to create the modern appreciation of Spinoza in Britain. "I believe," he says in his "Biographia Literaria," "that the three great works since the introduction of Christianity are—Bacon's 'Novum Organum,' Spinoza's 'Ethics' and Kant's 'Critique of Pure Reason.'" It was Coleridge who introduced the Dutch thinker to Wordsworth, in whose poetry none can fail to recognize a view of man and the world similar to that which the philosopher more systematically propounded. Among the early students of Spinoza must be mentioned Shelley, who actually began a translation of the "Tractatus Theologico-Politicus." Nor must we omit Carlyle, M. Arnold and Froude, and in America, Longfellow and Emerson, as writers, who, to say the least of it, were aware of the importance of Spinoza. But if for a time the majesty of the critical philosophy and its development thrust Spinozism into the background, a revival of interest within the last decades can be detected. The bi-centenary of Spinoza's death, which fell in 1877, gave occasion for a concentration of activity, and from the land of its birth as well as from other countries there issued a number of monographs and expositions which gave fresh impetus to the study of his philosophy.

It is, however, remarkable that, while in Germany and France several excellent translations of Spinoza's works have appeared, there has been published no complete English edition, nor any trustworthy rendering of his most important books. The "Tractatus Theologico-Politicus" was translated in 1689, reprinted in 1737 and again translated in 1868. Dr. R. Willis, who was the acknowledged translator of the work just mentioned, published in 1870 a translation of the "Ethics." But in the estimate of scholars "this version is far too inaccurate to be of any serious use." There is still a later anonymous translation (New York, 1876), which unfortunately copies nearly all Dr. Willis's errors. The "De Intellectus Emendatione," the "Principia Philosophiæ and Cogitata Metaphysica," and the "De Deo et Homine" have never been, as far as we are aware, done into English.

It is therefore with the liveliest interest and sincerest gratitude that we welcome Miss Lydia Robinson's most lucid translation of Spinoza's "Short Treatise." In giving to English-speaking people the first version of this, the earliest of Spinoza's works, she has done something to remove a reproach which we have been too long content to merit. The treatise,

short though it is and written when its author was comparatively young, is too important for the student of philosophy to ignore. It is valuable in itself, but historically it is of much significance, as in it we see the system of Spinoza in the making. The exact date of its composition is unknown, but it is probable that Spinoza wrote it about the age of twenty-seven. When, in 1660, he was excommunicated from Amsterdam and took up his abode near Leyden, it is thought that he either left this treatise behind him to be circulated among his friends or sent it to them soon after his departure. It was originally written in Latin, but was immediately translated into Dutch by one of his friends. Both versions were lost sight of until the middle of the nineteenth century, when a copy of the Dutch manuscript was discovered, although no Latin original has ever been found.

The latest and best edition of the Dutch is that of I. Van Vloten and I. P. N. Land in Vol. III. of their "Benedicti De Spinoza Opera" (Hague, 1895). It is from this text Miss Robinson's translation has been made. As far as we are able to judge, the rendering seems accurate and faithful. We have noticed here and there a certain crudity and inelegance of expression, but that is probably due rather to the style of the author or transcriber than to the ineptitude of the present translator.

We hope that Miss Robinson will be encouraged by the success of this volume to continue her labors and give us ere long in an appropriate English dress the other treatises of Spinoza which still remain untranslated.

We are not sure that we approve of prefixing to the "Short Treatise," as the author has done, Schwegler's chapter on Spinoza taken intact from the English translation of his "History of Philosophy." We have no fault to find with Schwegler's brief account of Spinoza's philosophy, which, within its limits, is accurate and succinct. It is not, indeed, the best or fullest account that is known to us. Erdmann's, to name only one of the earlier expositions, is much more exhaustive and complete, and as Hutchison Stirling says, is distinguished beyond others in "that he has detected the Secret of Spinoza." But where so many analyses are easily available, it was scarcely worth while reprinting any particular account. We should fancy the student would prefer to have Spinoza's "Short Treatise" by itself, or, if an introduction was desirable, the space, in our opinion, might have been better utilized had Miss Robinson supplied us in her own words, with a brief history of the "De Deo et Homine," working out a comparison between it and his later writings, and showing particularly its agreement with and divergence from the "Ethics." This, so far as we know, has never been fully done. There are some paragraphs on the subject in Pollock's "Spinoza": and Dr. John Caird, in a note in his small volume, tells us that the limits of space precluded him from examining the "De Deo," etc., as a preliminary to the study of the "Ethics," as he had originally intended.

Such a comparison would be specially interesting as casting light upon the genesis and development of Spinoza's ideas. In one sense Spinoza was the most impersonal of all philosophers. The man and the

system stand apart, and seldom is there a hint in his writings as to what kind of personality he was, whence he drew his inspiration, or by what outward stages or internal conflict his conception of the universe attained to the completed form it assumes in the "Ethics." And yet in another sense there never was a thinker to whom Fichte's remark might be more appropriately applied, that a man's philosophy is determined by the kind of man he is. It would seem to be something more than a coincidence, as has been suggested by Hegel, that a Jew should develop the philosophy of idealism to its ultimate issue. Absolute unity and abstract monotheism are ideas peculiarly characteristic of the Oriental mind: and the nationality, associations, and education of this man not unnaturally predisposed him to start with the unity of God, and to give to his philosophy that theological, mystical complexion which the most competent scholars detect in it.

If we were to judge solely by the "Ethics" we might assume that Spinoza's dominating interest was the speculative one of simply overcoming the dualism of Descartes and elaborating a scientific conception of nature. The leading idea of his philosophy, as commonly accepted, is that of the unity and uniformity of the world. Nature, as conceived by him, includes thought not less than things, and the order of nature knows no interruption. But this conception of Spinoza is really two-sided. It has an ideal aspect and a physical or scientific. On the one hand, we find a line of reasoning derived from theology, which starts with the consideration of the nature and perfection of God. On the other hand, we have a view of the universe in harmony with the requirements of exact science. The union of these two elements, the pantheistic, or mystical element, and the scientific, is one of the most characteristic features of Spinoza's philosophy. Now the pantheistic element can be traced to the mediæval Jewish philosophers and to Giordano Bruno, with whose works Spinoza was familiar. The scientific element may be assigned to his study of Descartes' method and principle. But while the idea of natural law runs through the whole "Ethics" and gives unity to his entire conception of the universe, it is the practical part of his philosophy, his view of the nature of man and his relation to God, which is really the most original and most deeply colored with his own personality.

The question therefore arises which element—the theological and religious, or the scientific—was the dominating one in Spinoza's mind, and from which did his philosophy start? Now on the origin and growth of Spinoza's ideas this lately discovered essay on "God and Man" throws special light. It may be regarded, as Caird calls it, "as a kind of study for his greater or more systematic work," in which we see the writer feeling his way to the ideas concerning God and man which reappear, freed from their crude irrelevances, in their more mature and perfect form. It reveals the ferment and conflict of elements received from different quarters, but not yet subdued, as they afterwards were, to their proportionate places in the new structure. Above all, it affords evidence as to the practical aim of his thought, and positive proof that he really worked out his metaphysic by starting in the first instance from theology. The

leaders of mediæval Jewish thought had endeavored to express their theology in the Aristotelian mould of their age. Spinoza took up their work and sought, with the new instrument furnished by Descartes, to refashion it and carry their arguments to their ultimate issue.

The argument of the essay begins in a purely *a priori* manner with the nature and attributes of God. The absolute uniformity of nature and the implied rejection of final causes are deduced from a consideration of the divine freedom and perfection. There is no formal discussion of the two attributes, thought and extension, as there is in the "Ethics." Nor are the modes scientifically deduced as in the later work. By far the largest part of the essay is taken up with a treatment of man and his welfare. The love of God is represented as man's only true good. Only the knowledge of God will enable us to subdue the hurtful passions. This knowledge of God, which is the basis of all lesser knowledge, leads in turn to the *love* of God, which consists in the soul's union with Him. From this union also spring the true immortality and freedom of man.

The detachment from ordinary care, in which the essay makes man's happiness to consist, almost approaches to quietism. "Hate, the direct opposite of love, arises from error, originating in opinion . . . in all that there is or is thought to be, is nothing more than wretchedness itself in comparison with the true good. And is not such a lover of misery more worthy of pity than hate?" (Part II., Chap. 3.)

If we turn to the "Ethics" we find there also preeminence given to the knowledge and love of God, but the cares of life are not disparaged nor are the ordinary pleasures and pursuits, though not regarded as sufficient objects of life, treated as mere wretchedness. The love of God, though presented as in the "Short Treatise," as the perfect condition of the human mind, acquires a much more intellectual character and is scarcely to be distinguished from pure speculative knowledge.

Finally, in the "Short Treatise" we have an interesting light thrown upon an element in Spinoza's system which has caused a good deal of discussion—"the infinite modes"—elements which apparently Spinoza conceived, to bridge over the gulf between the infinite substance and the particular, finite modes. "There are," he says, "certain things immediately produced by God" which, though individual, are infinite in their kind and necessary in an eminent manner as being coextensive with the attributes to which they belong. What these infinite modes are is not stated in the "Ethics," but an explanation of them is to be found in the "Short Treatise" (Part I., Chap. 9). "We have knowledge of only two general *natura naturata* or modes of creations which depend immediately upon or are created by God: and there are *motion* in matter (*Stoffe*) and *understanding* in the thinking thing. We then say that these have been known from all eternity and will remain changeless to all eternity, truly a work as great as beseemeth the greatness of the master." It is worthy of note that motion and understanding—the eternal and immutable creatures, are called, by a striking Hebraism, "Sons of God"—language which has vanished from the more strictly scientific work, but which, appearing in the earlier treatise, indicates the influence of Jewish and neo-Platonic thought.

On the whole, while many other interesting points of contrast and similarity might be indicated, had we space, the essay is extremely valuable as showing not only the sources and development of Spinoza's philosophy, but also the dominating interest and particular trend of his thoughts. No philosopher has been so variously judged or misjudged as Spinoza. By some he has been execrated as the archenemy of religion. By others he has been extolled as the prophet of a higher cult. Dugald Stewart saw in his philosophy the seeds of blank atheism. Novalis called him the "God-intoxicated man." An atheist he by no means was. He denied indeed the personal God of the Christian, and he did not believe in the freedom of the will as it is commonly understood. He has been called a pantheist, though perhaps with Hegel it would be more correct to call him an acosmist. The world is in God, and we can only know it and ourselves through and by him. The "Short Treatise" shows indubitably that his main impulse towards philosophy is to find an answer to the question, Wherein does man's welfare and happiness consist and how can he best attain to it? Metaphysics, psychology, and physical science are interesting to him only as furthering the supreme problem, and the consideration of human utility is the dominating motive of all his speculation. The "Short Essay" discusses the same subjects as the "Ethics"—the aim of both is purely practical. It is a quest after life and blessedness. But whereas the carefully elaborated system with its rigorous adhesion to Descartes's mathematical method, in vogue at the time, has eliminated the personal element, the more informal character of the earlier work makes it possible to gain a glimpse of the young philosopher's effort to grasp at a tangible support upon which his highest intellectual and moral aspirations might rest after he had lost faith in the symbols of his childhood. To know God as the final cause of all things is for Spinoza the fundamental and, in a sense, the only principle which can explain the manifold variety of human endeavor. It is the condition and soul of social concord and security no less than of a virtuous character. Whatever is real is real only in and through God, for he is the immanent energy and life of all that is. This conception that nothing comes into being or continues in being, save in and through God, and that all that exists—the world with its varied energies, man with his restless passions and hopes—is real and instinct with divine power and perfection, is the dominating thought of all Spinoza's works. As early as the "Short Treatise" he has definitely and clearly grasped it, and all his later books not only embody it, but are simply the development of what is involved therein. It is no doubt true, as Sir Frederick Pollock has declared, that Spinoza would have been the last man to desire any one to become a Spinozist. But his inmost longing was that all men should be blessed with that inward peace which be proved by his own heroic experience to be identical with the self-control conferred and maintained by devout contemplation of God. There is much in his philosophy we may find fantastic and objectionable. We may object to the abstract and contentless nature of the substance. We may charge him with duality in his conception of the divine attributes of thought and extension: we may refuse

to accept as an explanation of life the ghostly phantoms into which he resolves all human existence: we may see in his whole system of philosophy indeed nothing but the "*Abgrund der Vernichtung*"—the abyss in which all particulars are annihilated, according to the Hegelian criticism —but nothing can detract from the profound and exalted idea of God's being which he conceived or the sublime aim which, by his life not less than his words, he set before man to find his highest good in devotion to the highest he knows.

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Realities and Ideals. FREDERIC HARRISON. New York: The Macmillan Co. 1908. Pp. xiii + 462.

Forty-four essays are included in this volume, the first twenty-four being social and political, the last twenty concerned primarily with matters of literature and art, while all have a more or less direct ethical bearing. Certain essays written a number of years ago have acquired fresh interest through recent events. Such is the opening essay on "England and France," in which the author maintains that the progress of civilization in Europe will be most effectually furthered by the close cooperation and continued alliance of England and France. Many of the predictions made in this essay, first published in 1866, have been fulfilled in the *entente* at present existing between the countries in question. The renewed agitation for woman's suffrage gives added significance to the four chapters on the position and work of women. The author would secure for women a position in society equal in importance and dignity to that of men with as complete and thorough an education, but believes that social development demands not identity, but increasing differentiation, in the social function of the sexes. Hence he is strongly opposed to granting the ballot to women. In his essay on "Votes for Women" he advances the curious argument that women are unfit to participate in the affairs of government because they, like philosophers, preachers, and moralists, working in the *moral* sphere and exerting spiritual influence through their devotion to principles and ideals, are thereby unfitted to enter the *material* realm of government where not principles, nor theories, but expediency and compromise, must rule. Such arguments are plausible and entertaining. But with equal plausibility it may be argued that scholars and theorists are unfit for political activity for the opposite reason—viz., that the breadth of their knowledge, showing them both sides of every question, causes suspense of judgment and paralysis of the powers of action, while the ignorance of the ordinary citizen, allowing him to remain prejudiced and partisan, enables him to render more effective service to the political causes which he espouses. In harmony with this view that the moralist and preacher should confine themselves to methods of persuasion and influence, Mr. Harrison in his chapter on "The Veto on Drink" condemns all efforts to enact laws prohibiting the sale or use of intoxicants. The positivistic philosophy is seen at its best in such essays as those on "Centenaries," "Modern Pilgrimages," and

"The Use of Sunday," in which the author shows what ethical value may be given to certain traditional institutions and observances. In the essays of this volume the quality that most impresses one is the fine spirit of idealism which characterizes them all. While Mr. Harrison repudiates all supernaturalism, his "religion of humanity" is far from a naturalism which finds the good in the satisfaction of man's natural impulses and appetites. Rather it is the unfolding of the higher personal and spiritual capacities of man which he has always in mind as the *summum bonum.*

HENRY W. WRIGHT.

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JOURNALS AND NEW BOOKS

THE PHILOSOPHICAL REVIEW. July, 1909. *The Meaning of Φύσις in the Greek Physiologers* (pp. 369–383): A. O. LOVEJOY.–Discusses the rival interpretations of Φύσις as primitive and underlying substance, and as law and process of generation. Decides in favor of the former. *Kant's First Antinomy* (pp. 384–395): E. A. SINGER.–"No possible experiment could decide the issue between a finite distribution of bodies in space and an infinite, between a finite world history and an infinite." The situation implies the existence of an unknowable fact, a *Ding-an-sich.* The lesson of the antinomy is that we should "neglect no source of constant error, and should reduce the probable error of experiment more and more." *The Practical Character of Reality* (pp. 396–415): GRACE A. DE LAGUNA.–A very skillful and interesting demonstration of the incompatibility of two phases of pragmatism: viz., the instrumental theory of knowledge, and the immediastic theory of reality. The author appears to accept instrumentalism, and for that reason regards immediatism as a no less one-sided doctrine than absolutism. *Averroes on the Metaphysics of Aristotle* (pp. 416–428): ISAAC HUSIK.–An account of the work and method of Averroes, his relation to other commentators, and the accessibility to present-day occidental students of his writings. *Review of books* (pp. 429–445). Edward Westermarck, *The Origin and Development of the Moral Ideas:* E. B. MCGILVARY. Hans Driesch, *The Science and Philosophy of the Organism:* E. G. SPAULDING. M. Kronenberg, *Geschichte des deutschen Idealismus:* ELLEN BLISS TALBOT. *Notices of New Books. Summaries of Articles. Notes.*

Diès, Auguste. *La définition de l'être et la nature des idées dans le sophiste de Platon.* Paris: Félix Alcan. 1909. Pp. vii + 137.

Diès, Auguste. *Le cycle mystique: la divinité origine et fin des existences individuelles dans la philosophie antésocratique.* Paris: Félix Alcan. 1909. Pp. iv + 115.

Proceedings of the Aristotelian Society. New Series. Vol. IX. London: Williams and Norgate. 1909. Pp. 259. 10s. 6d. *net.*

NOTES AND NEWS

In the issue of this JOURNAL for July 22 notice was given of the second decennial celebration of the opening of Clark University at the university, Worcester, Massachusetts. It is announced in the program of these exercises that Clark University "will celebrate the completion of the twentieth year of its activity by a series of lectures and discussions in each of the departments of mathematics, physics, chemistry, biology, psychology, pedagogy, and history, and several academic and social meetings." We quote from the program some of the lectures and addresses of special interest. Professor E. H. Moore, of the University of Chicago, will deliver two lectures on the "Rôle of Postulation Methods in Mathematics"; and Professor J. W. A. Young, of the same university, will discuss the topic of the "Effectiveness of Mathematical Training." An interesting list of questions is published by the Physics Department as suggested subjects for discussion in the conferences to be held by that department on the teaching of physics in school, college, and university. In the special program of the chemical exercises it is announced that "A majority of the lectures will form critical summaries of the *status quo* of important chapters of chemical science, and will subsequently be published in a volume similar to those of Ahren's well-known *Sammlung*." The program for the psychological meetings contains the following lectures and conferences: "Diverse Ideals and Divergent Conclusions in the Study of Behavior in Lower Organisms," Dr. H. S. Jennings; "Psychological Problems in Anthropology," Dr. Frank Boas; "The Teaching of Psychology in Normal Schools," Chairman of the conference, Professor Guy Montrose Whipple; "The Opportunity and Need for Research in the Field of Education," Chairman of the conference, Dr. Elmer Ellsworth Brown; "The Past Ten Years in Experimental Psychology," Dr. E. B. Titchener; "Some Remarks on the Relations of Body and Mind," Dr. Leo Burgerstein; "The Experimental Psychology of the Thought Processes," Dr. E. B. Titchener; "Elementary Psychology in the College," Chairman of the conference, Dr. Carl E. Seashore. The subject for consideration in the sessions of the History Department will be the countries of the far east—India, Japan, Korea, and China. The program for these meetings is exceedingly rich and varied.

At the celebration of the fifth centenary of the University of Leipzig five honorary degrees were conferred upon Americans. Professor E. B. Wilson, of Columbia University, received the degree of doctor of medicine; Professor Jacques Loeb, of the University of California, and Professor A. A. Michelson, of the University of Chicago, the degree of doctor of philosophy. Degrees were also conferred upon Mr. Rooosevelt and upon Professor J. W. Burgess, of Columbia University. The address made on behalf of American universities was delivered by President J. G. Schurman, of Cornell University.

Announcement was made in the last issue of this JOURNAL for August 19 of the Winnipeg meeting of the British Association for the Advancement of Science at the University of Manitoba on August 25. It is now

proposed to invite the British Association to meet in 1913 in Australia. The University of Melbourne is in communication with several Australian universities with a view to formulating definite proposals. It is suggested that the invitation should proceed from the commonwealth.

THE French Association for the Advancement of Science will meet this year at Lille during the week of September 2–7, under the presidency of Professor Landouzy, dean of the faculty of medicine in the University of Paris. The gold medal of the Association, which was instituted last year, is to be awarded to Professor H. Poincaré. Professor Poincaré will deliver a lecture in the course of the meeting.

THE Society of Anthropology has celebrated in the great amphitheater of the College of Medicine in Paris the fiftieth anniversary of its foundation. M. Bayet, the director of higher education at the Ministry of Public Instruction, presided, and a great number of delegates from France and foreign societies were present.

AT the Sixth International Congress of Psychology which was held at the University of Geneva during the week of August 3–7, honorary degrees were conferred upon a hundred and fifty persons. Among those to receive doctorates were Professor Ernst Haeckel, of the University at Jena, and Professor Ostwald.

DR. JOHN M. WARBEKE, of Williams College, contributes an article on Nietzsche to the July issue of the *Harvard Theological Review*. He describes Nietzsche as "anti-christ, superman, and pragmatist." The presence in one person of the qualities which such a description implies is undoubtedly the equivalent of genius.

DR. C. LLOYD MORGAN, F.R.S., has resigned the office of vice-chancellor of the University of Bristol. In accepting the same the council has placed on record its sense of the distinguished services rendered by him to the cause of university education during the twenty-two years of his tenure of office.

IT is interesting to note that, during the period of the celebration of the Darwin centenary in England and America, Lamarck, the French precursor of Darwin, was being honored in France. A statue of Lamarck was installed in Paris in the gardens of the Museum on June 13.

DR. KARL RUNGE, professor of philosophy in Göttingen, will be the Kaiser Wilhelm Professor at Columbia University for the coming academic year. Professor Runge will give an extended course of lectures on "Graphical Methods in Physics and Applied Mathematics."

M. MILHAUD, professor in philosophy in the University of Montpellier, has been appointed professor of the history of philosophy in its relations to the sciences, at the Sorbonne.

PROFESSOR W. WUNDT, of the University of Leipzig, has been appointed foreign member of the National Academy of Sciences at Washington, D. C.

THE Assembly of Iceland has decided to establish a university at Reikjavik, with four faculties and sixteen professors and lecturers.

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CONATION AND MENTAL ACTIVITY. II[1]

III. Conation and the Self

NO one supposes that, in the earlier and more undeveloped stages of conation, "the self" is pictured as identified with a wished-for future condition or even that there is anything at all which might justly be called *the self*. And now following Dr. Stout, I go a step further and suggest that, even when a conative state has become complex enough to involve thoughts of the present situation, of a change in it, a desire for the change, and a tendency toward it, even then there need be no identification of the thing wanted with *the self*. If all that is meant is that we think of ourselves as trying to get what we want, it may readily be granted; but is this identification, and is it with *the self?* Perhaps it might not be amiss to remember that it is usually other things and other people that we wish would change, not ourselves; though, doubtless, we wish changes in them, not so much for their own sakes as for ours; so that in these cases there is a reference to ourselves, though not necessarily to *the* self.

But in the vast majority of my conative states, if my introspection is not at fault, I do not identify what I want with *the* self. I want to get something and I set about getting it. I do not dignify my wants as eternal attributes of a persistent me. "I want what I want when I want it," as an American song says. A man may not even identify himself with what he is striving with all his might to do. He may even resist the notion that his action binds him or in any way affects his true self. "The last drop, Clemmy my boy, the last drop," says Richard Phenyl in "Sweet Lavender," pleading for more liquor. The unspoken argument runs somewhat thus, "I am not a drunkard at bottom (the real self). This drop won't make me one." And, as the desire swamps all representative as against presentative considerations, "I'm going to have this drink, anyway." Doubtless, an exaggerated case; but of how many of our own longings and activities could we make parallel statements, though not perhaps of anything so vulgar as strong drink!

[1] For the first article of this series see this Journal, Vol. VI., No. 18.

> "To thine own self be true . . .
> Thou canst not then be false to any man"

says Shakespeare. As there is still, however, much falsity in the world, notwithstanding this analysis of ethical psychology, we can only suppose that there is much conative activity whose aim has not been identified with the self.

Beyond and below all these questions of definition there is a deeper difference between those who regard the essence of will and conation as consisting in the result of an interplay of ideas and those who regard conation as fundamental in psychic life. If we are to wait for mental activity until we have first, a conception of the self, and secondly, a capacity for ideal wants, power to picture ideal futures and compare them with present situations, then, except for high stages of intellectual development, there will be no such activity. Herbart, indeed, deliberately faced a similar issue. His doctrine that will is developed within the circle of ideas, and his extremely unbiologic conception of the mind as a sort of neutral territory on which opposing apperceptive masses fight it out, were coherent enough, if not true. Development in his view resulted from a swallowing up of the smaller and more sporadic by the larger and more organized systems of ideas; they drove the others out of mind, or demanded their de-individualization as a condition of their existence, as if they were admitting them to a trade-union or political party. When thus organized and coherent we have *the* self. On this showing, no "idea" can get in unless favored by the house party; indeed, to get in at all, it must be received in some way by the party in possession—apperceived, the technical term is. There is some ground here, therefore, for talking about ideas being identified with the self; but, though there might be mental activity in the process of reception, it is after all only the reception of an idea; if it is to become fact it must, as the newspaper slang of the day has it, be materialized. And this, except for very fortunate persons, usually requires conative activity in addition, that is, an actual striving to realize their thought.

Possibly, it may fairly be objected that what is meant by writers who take this view of mental activity just criticized is not so much that every conative state may be thus described, but that all highly developed conative states ought to be of this character. They have furnished normatives for our instruction and guidance rather than the normals of science. That we should compare our wished-for state with our present situation, that our actions should be based on deliberate decision, that we should hold our ideas before us in an objective way, and think how far they harmonize with what we know of our own character, all this is excellent counsel and such

descriptions furnish a valuable chapter in psychological ethics. Such work as this, because it is good pedagogy rather than good psychology, has made Herbart so valuable a writer for teachers. But, if I am not mistaken, it is just here that the difficulty has arisen. Some of us are seeking the psychology of conation, others its ethics. But how is the above account bad psychology? an Herbartian may object. Is it not a true account of the way in which many of us—the more moral of us—do deal with our conative states? It is; but how do we get the "ideas" whose coherence forms character? Have they no relation to inner activities and strivings which, indeed, preceded "ideas" altogether? And, on the ethical ground itself, is a static coherency the aim of morality? The great evolutionist, Mr. H. Spencer, thought it was; but then, he was non-evolutionary in metaphysics and ethics. Do we think so now? But, not to dispute as to ideals, let us return to the psychology of the question. What of our own new departures, our sudden conversions, our revolutions in thought? What of the still, small voice which we obey when the thunderous noise and luminous glare startle us indeed, but do not direct us? If we were to act only in accordance with the bulk of our ideas, I venture to suggest that we should all do what our pastors and masters, spiritual and other, have all along prescribed for us. But we do not; the relatively isolated stands out against a whole mass of inter-congruent notions. Coalescence is often quite impossible, and the point for us now is that the whole conative tendency may be with the new idea; a comparatively bloodless logic alone supports the others. I do not say this ought to be so, but introspection applied to any progressive life will decide that it is a common case. Such conations frequently carry the feeling of ethical value and our ethical judgments support them. Perhaps they ought not, but psychologically they do.

It will be seen by those who have followed the line of argument, suggested, perhaps, rather than worked out, that I have admitted as *our ideas* any which we appear to understand and accept intellectually. Perhaps this might fairly be objected to; but it seemed to me most in accord with common usage.

IV. Conation, Pleasure and Pain

Nearly all of us hate and avoid death and strive to live on, however miserable our lives. It is true that a few very reasonable persons, having clearly concluded that life to them will continue to yield a balance of unhappiness, courageously put an end to themselves. Notwithstanding our usual exhortations to rationality, we declare these people to be insane. So that I am justified in putting them out of court, since I am dealing here with normal psychology only.

An interesting point is that our dislike of death is not derived from experience, unless it be true, after all, that eels do get used to being skinned.

The progress of life is, on one side, not inaptly illustrated by the acquirement of our pleasant vices (a significant combination of adjective and noun—we never speak of virtues as pleasant). For example, our first smoke lives with us in vivid memories. We derived so much pleasure from it that we went at it again, according to the classical association plain-pleasure school. But the plain man will hardly accept this, nor will, I think, even the least introspective psychologist. No, we just "stood it" for a while; the pleasure in it came some time afterwards. If this is true, and it seems largely true of life in two senses, both biologic and sporting, we must reconsider the old analysis of associationism. For those who have forgotten it, let me put it very briefly. Activity was a result of high nutrition; the animal plunged about or around in any and every way possible. Some of these movements he found pleasurable, others he found painful. He remembered which were which and repeated the pleasurable ones, I was going to say, *ad nauseam,* carefully avoiding the others.

Here we have a scheme which at least has the merit of explaining such profundities as "The burnt child dreads the fire." And, in addition, it provides our actions with a motive force. With pain and pleasure to drive us along, we have no need of a conative tendency. We can get adapted to our environments, we can forswear all agency except for the first unintentional and accidental squirm, and put all blame on the external world if things go wrong; our *mental* combinations are induced by its *material* ones, by those that we like more especially, because we run away from the others; and we can't help our likes and our dislikes. These are the positive advantages of the doctrine. Negatively, we can get rid of feelings of conative tendency, a mysterious something not measurable. Now if this scheme results from a true analysis and we can get rid of anything unmeasurable, it will be a gain to science and will do something to prevent the facile oratory whose overflow is even more noxious in educational theory than in psychology. But we must not say a thing does not exist because we have not yet found a reliable method of measuring it.

The whole question at issue turns on an adequate analysis of the conative state. To me our unspoken conative attitude seems to be, "I shan't be happy till I get it," and not, "I am trying to get it because I want to be happy." To those readers who think this mere verbalism I would ask how many times have they themselves found happiness when they *have* got it and whether they expect to do so next time.

Anthony Trollope, speaking of a lady whose daughter was at last successfully married, writes: "It was all done now. Everything was over. Though she had quarreled daily with her daughter for the last twelve years—to such an extent lately that no decently civil word ever passed between them—still there had been something to interest her. There had been something to fear and something to hope. The girl had always had some prospect before her more or less brilliant. Her life had had its occupation and future triumph was possible. Now it was all over. The link by which she had been bound to the earth was broken." Not to get what we want is painful, but the lowest earthly hell is to want nothing. Then, indeed, one may turn one's face to the wall. This is not pessimism. I am enunciating no philosophical creed. I am making statements as to mental facts; psychology, that is, not metaphysics. Nor does this analysis imply or invalidate any ethical belief.

It is quite arguable that we *ought* to say, "I want to get it because I ought to want to be happy and that will make me so." But it is so necessary for hedonists to preach this that we may be quite sure it is not often done. When Mill argued that happiness ought to be desired because we do desire it, he was making the acceptance of his own ideal difficult by basing it upon an error. We may fitly remember that when he was asked if he would be happy if all the reforms he wished for were carried out, he thought for a while, and then said, "No"! It must have been a hard saying, for he would see clearly enough the implied refutation of the basis of his own ethical doctrine. Let me try to present my analysis in another way —an imaginary dialogue.

A. "I want something and am trying to get it."

B. "Are you pleased to want it?"

A. "I do not know; sometimes I am."

B. "Are you pained to want it?"

A. "I do not know; sometimes I am."

B. "Do you feel happy when you are getting towards it and unhappy when thwarted?"

A. "Yes, certainly."

B. "Will you be happy when you get it?"

A. (Thoughtfully) "I do not know; I know I want it."[2]

If such an attitude is possible, and that is the lowest verisimilitude that can be claimed for it, it would seem that a feeling of tendency

[2] A lady of uncertain age is reported to have asked recently at a railway bookstall for a good book on marriage. The attendant strongly recommended a work entitled "How to be Happy Though Married." The lady replied that she did not want that sort of a thing at all; what she wanted was a book on how to get married; the happiness could take care of itself.

and want can be clearly distinguished from pleasure and pain, and that we can go forward without being allured by prospective pleasure or driven by present pain. "We take a withering stick and plant it in the ground," says Sterne, "and then we water it because we have planted it."

But can these feelings of tendency be distinguished from those of pleasure and pain? Can they be "*distinguished* as *separate* elementary processes? Do these words mean in the minds of those who use them, can they be *separated* as *distinct* processes? If they do, it may be necessary to answer the question in the negative, as indeed we might have to do for any mental constituents whatever. But if they mean, can they be distinguished as separate processes? it seems enough to say that we *can* distinguish them separately; and, that we think we are repeatedly doing it, ordinary intercourse shows.

Most of the disciplinary devices of the educational psychologist aim at the employment of tendency, the occupation of the pupil's own activities. It is not so common now for children to be driven forward by punishment, and it is beginning to be thought bad to dangle before them perpetually the allurements of reward. When considering a boy's work, the teacher asks himself, "Has the boy tried?" The boy at least thinks he knows whether he was trying or not and, if he is unsuccessful in his work, spontaneously adopts the defense, "I did try hard, sir." Now the teacher, if he is to be respected by his pupils, must not be easily deceived. That is, he must be able in some way to measure the amount of "try." And, unless pupil and teacher are forever to be at cross purposes, the result the teacher gets must roughly approximate to the feeling of try as experienced by the pupil. How does the teacher do it? Obviously not by the comparison of results between A and B, but by a comparison of A's own work at different times, with certain supplementary checks as to the appearance of continuity of attention. The results are functions of two variables, the power of doing the work *if* attention be given to it, and the amount of continuous attention which *is* given to it.

We find then that this difficult problem, the evaluation of the separate factors, is done roughly every day. True it is that one can not externally separate the power from the "try"; there must be some power and there must be some "try"; but they can be distinguished as separate; there can be much "try" with little power, and much power with little "try."

Some experimental psychologists, however, would, I fear, still assert that they can not recognize so vague a thing. But read their own accounts of their experiments. Let us imagine some from the Oxford Laboratory. Such sentences as the following might be

found, "I do not think that F. H. B.'s work was reliable; he was obviously not keen about results and was not trying to get them; he seemed to think that each mental process was more like another than it was like itself, that they were, indeed, Absolutely the same." Or again, "F. C. S. S. was a capital observer, profoundly interested in the work and most keen to get good results in practise." I need not go on; the admissions are evident.

On the other hand, other experimental psychologists have believed so fully that they could measure the attention given to a piece of work—its amount of "try"—that they have held the results of the work to be directly proportional to the attention and so have accepted the results as a direct measure of attention. With this I do not agree, but I have great hopes that we shall soon have satisfactory devices, direct or indirect, for measuring felt tendency; let us trust, without too much artificial simplification.

V. Conation and Sensations

The identification of our feelings of mental activity with motor sensations is one more step toward simplification and is, therefore, to be welcomed, if analysis will bear it out.

One school of thinkers, we may remember, would allow us no activity in mind without a complicated interplay of ideas; mental activity was, indeed, for them, limited to the intellectual play of ideal contents with an "ego" as onlooker whose impartiality and purity [it was sometimes called the *pure* ego] restrained him from striving to realize the ideas in practise, though he said they were his own, and thought of himself as having them.

The opposed school, however, tells us to look for our feelings of activity in quite a different direction. It believes that we shall find them identical with sensations of strain, pressure, and tension, which are, of course, of peripheral origin. Our sensations of strain, pressure, and tension, however, are marked, and only marked when we are opposed, or tired; and, if our feelings of activity are due to them, we can only conclude that we are most active when we are most impeded. It is true that we know we are active when we make an effort; but we feel more active when we don't need to make an effort. When I make efforts to write psychology, it is poor stuff, I know; at other times, I, at least, am not equally aware of that.

We may compare also the speed of effortless activity with activity under strain. In the one case we feel we are getting on; in the other, whatever the result of the work may be, we are slow and dispirited.

But does not Dr. Stout make undue concession to the opposing view in speaking of persons being interested in having motor sen-

sations? In explaining so carefully how, in his opinion, the error has arisen, in showing, as he does, that we can more easily obtain certain motor sensations by trying for them than we can obtain other sensations, and hence, being so often joined together, our mental activities and our movements have become identified, he has used language which seems to concede too much to the view to which he is opposed. "We can always have these (motor sensations) *when we are interested in having them*, and discontinue them *when we are interested in discontinuing them.*" In the beginning of mental development *motor sensations are very imperfectly under control.*" The child gradually acquires an habitual command over his motor experiences "so as to count on them as a matter of course whenever he is interested in having them."

Would not the second sentence run more truly thus? "In the beginning of mental development, the child's *movements* are very imperfectly under control." And is there any stage of human development, however low, in which movements are made for the pleasure of motor sensations? Are even the first violent and uncertain movements of the arms toward the mouth made for the sake of the pleasure of the motor sensations derived from them? And can we always discontinue the motor sensations when we are interested in discontinuing them? Last year's Oxford crew would have been glad if that were true. And the tired writer or telegraphist, acutely alive to every minute variation in his hand-motor sensations, goes on long after he is "interested in discontinuing them." For psychological purposes, indeed, we *can* become interested in them; but, in my opinion, to ascribe this interest to the child or to any one else in normal life is erroneous. Children, as far as I know them, are no more interested in their motor sensations as such than the Oxford and Cambridge crews were on April 4. The child, like them, wants to do something to win his race, not to get motor sensations. The opposed view seems to me to imply that a child judges his activities to be successful if he gets certain motor sensations from them.

How do we arrive at sensations? Do we begin with them and, from them, construct objects by a process of summation; then afterwards work up our objects into classes based upon their sensational likenesses and differences?

The psychological infant, who, fortunately for some of our theories, can not speak for himself, and would not know his own mind if he could, is sometimes described as proceeding in this way. Others make him chaotically perceive the universe as a sort of continuum, a "big, booming, buzzing universe," in which with purposive and analytic care he begins to identify and distinguish parts here and there.

With very young children and indeed with older ones (I can not speak for the infant), I have little doubt that the perception of objects is prior to both sensation and continuum. Genetically, therefore, it would not be correct to call the mind a sensation-complex. The separate sensational contributions to a percept are indeed only analyzed out and separately attended to with much effort on the part of a young child, and with much assistance from his teacher's directions. The "things" are well known, but the component sensations which help to form our percepts of them are not only not as well known, but are not always recognized when they are pointed out. So we begin with "things" in education, not "sensations." The reader will remark, "True, but not all the truth." A very intelligent class of seven-year-old children, fifty in number, were recently asked by their teacher to write down the first thing that came into their minds when she said the word "apple." Forty-eight of them wrote, "Eat it," "I should like to eat it," or, "You can eat it," in one form or another. One boy only, botanically minded, wrote "Pips" and illustrated the association known as that of the whole and the part. The "things" with which education begins are those which satisfy in some way some conative tendency.

But children are taught afterwards to concentrate attention on the sensational factors in their percepts. Why is this? And the experimental psychologist, also, isolates one sensational component after another so as to get the effect of each, as it were, *pure*. Is not the procedure of the teacher something like the procedure of the experimental psychologist? It certainly is so; and, in both cases, only by some such method can rapid advances in discrimination be made; without analysis little can be done.

But the teacher in his crowded classroom can not forget—as may more easily happen to the psychologist in the laboratory—that the perceptual and sensational growth of his observers is conditioned throughout, and always, by conations, without which, indeed, nothing but the idle play of fancy—the esthetic rather than the purposive grouping of sensations and percepts—would ever occur at all.

The motor sensations, which are said to be what we mean by conation, themselves occur, like other sensations, within the process which they are said to constitute.

Dr. Stout does not appear very hopeful about the investigation of the conative complex. We can not, he thinks, combine the elements with their peculiar connection by a constructive process in a laboratory. However this may be, we can and do, in real life, both industrial and educational, repeatedly endeavor to combine these elements in their peculiar connection.

In educational work, we count on children of certain ages having

certain tendencies rapidly developing and strongly felt. We believe that they will aim at certain ends. We may present to them a universe as rationally connected (and as unreal) as a mathematical formula; we may deck it with sweet things, chocolate alphabets and magic-lantern geography, and guard the wished-for land with corporal terrors; but vainly, for, whatever our ideal of education, whatever we wish the child to know and do, the work, to be successful, must somehow be linked up with, and must become progressive stages in, the accomplishment of something towards which the child's own nature tends. This conation, this natural activity, this developmental tendency,[2] which many of the builders of sensational psychology reject, is for the educationist the very headstone in the corner.

W. H. WINCH.

LONDON.

THE PROBLEM OF THE INFINITE IN SPACE AND TIME

M. RENOUVIER, one of the profoundest of modern finitists, derives his proof of the finiteness of space and time from the absurdity, and consequent unreality, of the infinite number. Certain contemporary logicians, on the other hand, prove the reality of the infinite number by appeal to the reality of empirically infinite spacial and temporal phenomena. This situation is at least interesting. As against Renouvier, it can be urged that the assertion of the finiteness of space is repugnant to the intelligence, while that of its infinity is somehow warm. But, on the other hand, there seems to be no justification for the logicians' assertion of the infinity of phenomena,[1] and Renouvier's rejection of the realized infinite number is sound. We have then the problem of reconciling the non-existential character of the infinite number with the intellectual demand that space and time be thought as infinite. A solution of this problem demands, of course, a reinvestigation of the nature of space and the formulation of a space concept.

There are three categories under which space and time can be conceived: they are *thing, relation,* and *quality* or *abstraction.* It is not necessary here to enter into the Leibniz-Newton controversy over relative and absolute space, as these two philosophers had different ends in view and were not talking about experience with a common purpose in mind. Also we need not touch upon the subject-object strife as waged by Fischer and Trendelenburg, for the solu-

[2] I do not argue that every natural tendency should be gratified; but that educational ideals must be grafted upon existing tendencies, if we are to realize them.

[1] Cf. this JOURNAL, Vol. V., No. 3, November, 1908, pp. 628–634.

tions in question, including Trendelenburg's *dritte möglichkeit,* are rooted in metaphysical presuppositions quite foreign to our empirical standpoint.[2] We have merely to examine the pragmatic value of the categories enumerated above with respect to the conception of space and time as finite or infinite.

The concept of space and time under the category of *things* is powerless to help us. For, as things, they must be actual and can neither be thought as finite or infinite. They can not be thought as finite, for every finite thing has limits beyond which there is something else, but to ask what is beyond space and time is absurd. And they can not be conceived as infinite things, for if actual and infinite they would present the realization of series which are defined in such a way that their realization is impossible. The category of the *thing,* therefore, even if in any sense intelligible when applied to space or time, has no value for the problem that we have undertaken to solve.

Space or time as a relation between things is still less a satisfactory concept. Not only is it hard to attach any meaning to the finity or infinity of a relation, but also it becomes necessary under this concept to speak of objects as spacially and extendedly related and not as extended and spacial. We can, of course, define the spacial as that which is spacially related to other things and is composed of spacially related parts, and analogously the temporal, and such concepts might work for geometrical analyses. We seem, however, to live with extended things that are not mere complexes of extensively related non-extended phenomena. Only a mind "debauched by learning" and so dead to reality that it lives only in a play of reason can tolerate such a concept of space or time as ultimate. Consequently, even if the mathematician, as such, is satisfied, the category of relation as applied to space and time can not satisfy the broader purpose of philosophy, which demands the equivalent of an empirical presentation.

There remains then the possibility of conceiving space and time, in some sense, as abstractions from reality. This is fundamentally the position of Berkeley, for, of course, abstraction is not here meant in the sense in which he so convincingly proved abstract ideas to be absurd. "And perhaps, if we inquire narrowly, we shall find we can not even frame an idea of pure space exclusive of all body. This I must confess seems impossible as being a most abstract idea. . . . So that when I speak of pure or empty space, it is not to be supposed that the word 'space' stands for an idea distinct from or conceivable without body and motion—though indeed we are apt to think every noun substantive stands for a distinct idea that may be separated from all others."[3] If Berkeley had not been, like Spinoza, God-in-

[2] *Vaihinger's Commentar,* Bd. II., S. 131–151.

[3] "Principles," § 116.

toxicated, he might have developed the space concept for every future empiricism. As it is, we must carry on the development of the empiricist's concept of space and time for ourselves.

In the first place, it is evident that from this point of view space and time have existence independent of the rest of reality only in relation to some perceiver for whom they are pragmatic abstractions. They are aspects of reality that may be singled out for a purpose just as a hill may be selected from a landscape although in reality it melts into it and is continuous with it. Reality presents itself to us as a changing continuity, but, because changing, not as a homogeneous continuity. Some aspects of it are of great practical moment to us and others are relatively insignificant, and this fact suggests to us the notion of discreteness. Consequently all discreteness is discreteness for some perceiver and only pragmatically real; *i. e.*, real from some point of view and for some purpose.

The fact of change is often neglected in considering the space concept, for, at first blush, space seems to be the most peaceful and abiding of entities. Locke knew that space and time could not be separated. "Expansion and duration do mutually embrace and comprehend each other; every part of space being in every part of duration, and every part of duration in every part of expansion."[4] He might have gone farther: if one sets oneself the problem of contemplating an absolutely unchanging universe, one finds that not only time, but also space, has become meaningless. The common spacial predicates such as "distance," "direction," "between," have no significance independent of the idea of motion or change. From this dependence on the same fundamental reality and from their definite value with respect to it, space and time might be called the dimensions of change, and any change which is not both spacial and temporal is unthinkable.[5]

To conceive space and time thus as aspects of reality picked out from practical motives by the perceiver explains directly and simply the intellectual repugnance pertaining to the notion of finite space and time, for to try to conceive them as finite is to limit reality by an abstraction from it, as if one should define a necessary cataclysm and annihilation of the material universe on the grounds of a finite conception of color so that there might come to be no longer any color which things could be.

This concept also makes evident the absurdity of trying to treat space and time as actual infinities, for that would be to suppose the present actuality of all change. It is to put ourselves in the position

[4] "Essay," II., Ch. 15, § 12.

[5] This is affirmed of conscious, as well as of physical, change, and therefore with a readiness to accept some spatio-temporal theory of consciousness.

of a conscious absolute. But, then, there is not any space or time any more, for there is no way of abstracting them in his wholly peaceful reality. The situation may be interesting for this ideal absolute, and from his point of view, real; for mere man, however, the attitude is impractical, and the situation unreal. It is only the need of living with a changing reality that leads man to form a concept of the spacial and temporal as discrete aspects of things. A need immanent in us as living and conscious beings leads us to the abstraction of all the discrete entities out of which we build our world, and therefore this world reduces on last analysis to a pragmatic construction in the service of life, a construction in which the elements are unreal and abstract only in their discreteness, but are real and concrete in their continuity. The absolute itself is only such a construction, and as a limiting concept, having only ideal existence, may perhaps have pragmatic value. The objection to a real absolute is the same as that to a realized infinite: conceive reality as a real absolute and we are out of joint with the present and finite. It is an attempt to say what reality would be like if we were different and placed in an entirely different situation with respect to it from what we ever can be; and the difficulties of absolutism all arise from the attempt to conceive reality from such a point of view, and to derive thence conceptions which shall be of service to us in living with it as mere finite beings. We can not eat our cake and have it too.

The concept of space and time as abstractions does assure an infinity of space and time in exactly the same sense in which the mathematical infinite has meaning.[6] There are two forms of this infinity, infinite divisibility and infinite extension. To say that space and time are infinitely divisible means that our spacial and temporal experience permits of analysis analogous to that of the number continuum. As Berkeley says:[7] "In arithmetic, therefore, we regard not the *things,* but the *signs,* which nevertheless are not regarded for their own sake, but because they direct us how to act with relation to things, and dispose rightly of them." In other words, an elaborate definition like that of the linear continuum is merely the formulation of the method for breaking a line in two in so many ways that no conceivable break is unspecified. But to use an expression from my previous paper in this JOURNAL, referred to above, in a mathematical infinite new elements are always "bubbling up" and in calling space infinitely divisible, we are merely asserting that the evolution of our spacial experience is of the same type as the evolution of entities in the mathematical linear continuum.

With respect to infinite extension, the application is a little more

[6] Cf. note 1.

[7] "Treatise," § 122.

difficult to make. It is impossible to think of a growth or development of space without motion, and motion can only be defined as change of place. It is therefore evident that we do not mean by the infinity of space an extension of actual space in connection with a fuller experience of reality. When we define a mathematical series as infinite, as for example the whole number series, we mean that there is nothing in the nature of that series, as a pragmatic postulate, to limit the extent of any concrete realization of it, and that no actual or imaginable class of entities could be limited by it. Exactly the same thing is true of the infinity of space. To call space infinite means that the particular isolatable aspect of reality that we call space is of such a nature that it can not define a limit to existent reality, and that, therefore, in so far as reality exists it is spacial. The infinity of time is significant in a perfectly analogous fashion.

It follows that different geometrical conceptions of space, *n*-dimensional or curved, can be put on a level with the Euclidean concept, if they can be shown to be serviceable interpretations of the spacial aspect of experience. It is even possible to state the conditions under which a finite part of space might demand actual treatment as infinite from beings suitably organized. If, for example, as every object moved from some point in such a space, the object shrank to one half its size in the first unit distance, to one quarter of its original size in the next half-unit distance, etc., the distance of two units, as applied by a being not subject to the laws of that space, would comprise an infinity of space for beings within it, *i. e.*, whose experience was organized in accordance with its laws.[8] Their experience might appear spacially to them exactly as ours does to us, and there is no reason, except the spirit manifest in Occam's razor, to prevent us from considering our experience of reality as a fragment of a larger reality, experienced by differently organized beings as a greater space, and as containing our "infinity" as a finite portion. And this, it seems to me, is a reason why occult speculation is not eradicated from philosophy. There are always minds for whom it is easier to multiply hypotheses, even at the risk of clarity and at the expense of losing the advantages of our present scientific constructions, rather than to work and wait to understand a confused residuum of experienced reality in terms of already existing scientific postulates. It is easier to be mystical than scientific, and to formulate speculatively possible, but practically unverifiable, hypotheses than to apply verifiable ones.

The concept of space and time set forth in this paper can at least claim certain advantages as an hypothesis. It furnishes a solution

[8] Poincaré has used this illustration in another connection.

to its generating problem,[9] the need of thinking space and time as infinite, while denying the realization of the infinite number. It has a further advantage over Renouvier's[10] conception in that it exhibits at once the objective reality and the subjective significance of space and time in a simple fashion that accords with common sense. On the other hand, it implies a definite philosophical attitude, and must stand or fall with the success of that attitude in organizing human life in accordance with that need which generates every philosophy; and until set in such an organized system of hypotheses it must remain, even to the author, a matter of belief rather than of knowledge, for knowledge implies the testing of hypotheses not only with respect to the problem from which they spring, but also with reference to their consistency, with the set of solutions of all other problems. Such a development is, however, beyond the bounds of any single paper or any few years' thought.

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DISCUSSION

PHILOSOPHY AND THE HISTORY OF PHILOSOPHY

I DID not hear the two papers to which Professor Creighton refers in his recent discussion in this JOURNAL concerning a philosophical platform, and, from the abstract published, I can not gather much more than that Professor Schmidt and Mrs. Franklin think it is high time for philosophers to come to some sort of working agreement or platform from which further real progress can be made.

Now, it is doubtless true that the discussions in philosophical journals and at philosophical meetings—discussions which would lose their life and meaning if differences, rather than agreements, were not emphasized—do often leave the impression that the debaters are all at odds, and perhaps even that among the protagonists there is no agreement at all either as to methods or as to principles. But debate is the very soul of philosophical progress, and the keenest controversy, like the bitter quarrels of near relatives, often arises amongst those who stand on common ground. In fact, such discussion can be fruitful only if there be a common ground which is presupposed in the very antitheses that may be set up. The impression

[9] I borrow this term from Dr. Schmidt. Cf. this JOURNAL, Vol. VI., No. 11, 1909, pp. 281–286.

[10] "Il (espace) est l'intuition, qui fait pour ainsi dire prendre corps à l'exteriorité fundamentale, à l'exteriorité d'une conscience pour une autre conscience, et en est le symbole." *Nouveau Monadologie*, p. 102.

of current philosophical discussion as a sort of Donnybrook fair, in which the individual shows his intellectual vigor by hitting a head wherever he sees it, is corrected by looking for the common ground on which the assailants stand. And this reference to a common ground will usually be to a position that has emerged into clearness of recognition through the historical development of thought. We have all, I take it, for example, gotten beyond the flat opposition of empiricism and rationalism bequeathed by seventeenth and eighteenth century thought to the nineteenth century. We are all agreed that it is by an analysis and resynthesis of experience that philosophy proceeds. We are agreed that this experience is neither purely subjective or objective in the older sense of these terms, and that knowledge is neither innate nor passively received by the mind. We are agreed, I presume, that the mutual implication of subject and object renders subjective idealism as false and outworn a theory as materialism. Epistemologically we are all realists, and we only begin to debate when we set about the interpretation of the objectively real in its totality. I am not setting about to supply a platform, for I think we already have one; and we have won it through understanding the historical evolution of philosophy.

With Professor Creighton I question both the wisdom and the possibility of establishing by convention and agreement a complete philosophical platform. The actual movement of philosophy is at once too complex and too vital to render such a project feasible. Philosophy is the persistent endeavor reflectively and coherently to interpret experience in its totality. This totality in its evolving actuality bears in its bosom too many and varied contents, too much shifting of emphasis in interests and aims, too many delicate *nuances* of conception and feeling, too much room and play for the reaction of individuality, for it to be either possible or desirable to sum up assured results after the manner of such homogeneous and well-defined provinces as mathematics and physics. (I notice, however, that mathematicians and physicists show ever and anon a healthy tendency to go back in history and, from a historical standpoint, to hold debate in regard to foundations.)

I agree, then, with Professor Creighton in saying that it is in the interpretation of the history of philosophy as a meaningful evolution that we find whatever platform we need, a platform at once broad in its sweep and affording play for the logical vitality that should urge us forward. In the systematic understanding of the actual evolution of philosophy, a twofold understanding of the succession of past stages of thought in the light of present problems, and of present problems in the light of their ancestry, there are to be found at once points of departure for constructive work to-day and criteria by

which we may estimate the probable fruitfulness of any new departure. And this is quite as true where a new departure may seem to call for a break with history as it is where the new is obviously continuous with the old.

If there be no continuity and no forward movement in the history of philosophical thinking, if this history be simply a chronicle of isolated systems without logical filiation or inner genetic relationship, then all that the history of philosophy has to teach is the utter futility, for serious thinking men, of philosophical endeavor. If, on the other hand, the individual thinker to-day will go to school in the history of thought, he will find in it both continuity and real evolution in the progressive consciousness of problems and their solutions. He will learn what philosophy is through knowing what it really has been. He will, I, for one, believe, find in the evolution of philosophy a progressive clarification as to the nature, meaning, and internal relationships of reflective experience in its totality. His own work can start from a standpoint already achieved for good and all, and not from one previously passed by and become obsolete. To give an example, it is surely lost and useless labor to begin at this date the systematic treatment of the relation of mind and body with a cartesian dualism of attitude.

I add my words to Professor Creighton's because, as it seems to me, much current writing in philosophy is vitiated either by ignorance of, or indifference to, the history of thought. Such indifference or ignorance is not rendered justifiable or profitable by an appeal to a great name in the present. The remark is attributed to Professor James that we must "short circuit" Kant. The phrase, if it be, indeed, his, has Professor James's usual picturesque and telling effect. Nevertheless, be Kant never so barbaric in his terminology, be his "machine shop" of categories never so clumsy, philosophy can hardly "short circuit" him with impunity. Our "original" young writers must give him a fair trial before they can with a good face electrocute him. Again, one hears or reads now and then with astonishment of Hegel's static absolute, which allows no scope for a real evolution. One wonders where the critic learned his Hegel. It is possibly true that our work may lose the freshness of the morning air and give no suggestion of the birds singing,[1] but rather of pedantic scholarship, if we spend our young years in great part in the study of the history of thought, although I doubt whether dustiness, over-technicality, and lack of *verve* and swing, will be the necessary effects of a serious regard for the work that has been done in the centuries that have gone by, on a mind naturally clear and fresh. That has certainly not been the effect on Professor James himself,

[1] James, "A Pluralistic Universe," p. 265.

notwithstanding that he has made a conscientious and fruitful effort to render justice to a philosopher to whom he is temperamentally hostile. I mean Hegel.

There is one respect, of especial importance, in which I think lack of regard for the actual evolution of philosophy tends to work havoc with some of our present workers in philosophy, both in respect to their views of the function of philosophy and the present status of its main issues. I mean the absence of a right view as to the relation of constructive philosophy to the whole living movement of human culture. Philosophy, as system or world-insight, is always, I take it, the reduction to reflective and maximally coherent conceptual expression of the organic totality of convictions and points of view in regard to the world and man that take shape in the whole work of a specific human culture. Philosophy is neither simple nor exact, nor does it ever reach in any direction, perhaps, an absolute terminus. It lacks the firmness of texture of mathematics, and the clearness of outline of physics. And why? Simply because philosophy involves such a complex and delicate combination and adjustment of cultural motives and insights. It draws from the positive sciences, but no less from the moral, social, political, esthetic, and religious atmospheres of any great culture period. Philosophy arises from the convergent reflections of light rays that arise in the many and seemingly diverse but really connected interests, activities, and *apercûs* of a culture.

If one ignores the historical course of philosophy, one runs the danger of losing touch with this intimate association of philosophy with the living totality of culture life. To ask that philosophers shall establish a *concordat,* that, by convention, philosophy shall find the net certain results of its evolution summed up in a fixed set of universally recognized principles or well-defined formulas of common agreement, with the expectation that thus philosophy shall be able to set out on a peaceful and regular march of development, wherein the wicked have ceased from troubling and the weary are at rest, is, I submit, to forget this intimate and fruitful interdependence of philosophy and the totality of spiritual evolution which conditions philosophy and, in turn, is reacted upon by the latter. Intellectual and spiritual evolution do not proceed thus. These demands, if it were possible to fulfill them, would, by their fulfillment, give the death blow to philosophy as a vital element in culture evolution. Indeed, on closer view, the more exact sciences are found to make use of the historical point of view. There is an increasing tendency to recognize the pedagogical value of the historical treatment of the natural sciences. Mach's "Science of Mechanics" is a well-known example of this.

One is often asked by the layman, what philosophy is about, and whether it is not a fruitless logomachy that never arrives. The best answer to both these questions, and the best justification of philosophy, is to be found in the historical consideration of the relation of general culture-evolution to the evolution of philosophy. And one who gains some inkling of the meaning of this twofold evolution will not expect to learn, either in a few words or in a few propositions, what the results of philosophy up-to-date are.

That we have now amongst us vigorous reactions against imposing historical forms of thought, especially against metaphysical idealism, will be productive of good, if these reactions do not go the length of shutting the minds of our young philosophical thinkers against the clear recognition of our dependence upon, and continuity with, the work which has been really achieved by thinkers of old time. When one hears Plato dubbed an out and out rationalist, or Hegel an apostle of the static, or a psychological idealist of the same stripe as Locke and Berkeley, one may well confess misgivings in regard to the constructive fruitfulness of breaks with the past so violent that they produce such perversions of history.

Frequent plaint is made to-day of the divided and scattered character of philosophy. While musty professors are living in the past, losing the bloom of their minds in companionship with the ghosts of intellectualism, threshing out old straw with Plato and Aristotle, Kant, Fichte, and Hegel, we are told that mankind is crying out for a new school of thought. And the pragmatists seem to be the only group who are really making a brave effort to supply the need. But, in reality, are not the division and the distraction, the conflict and confusion, in philosophical thought to-day simply the expressions of the confusion and distraction in our whole culture-life? This is an era of transition. The new unified culture to be expressed in social organization, moral conviction, religious intuition, and esthethic creation, is doubtless in travail, but it is not yet born. When it comes to the full birth philosophy will unify itself, too. In the meantime philosophers will, I am convinced, prepare their discipline for this work only as they have learned, from the development of thought in history, where we now stand, from whence the departures must be made, and only as they have gained a sense of the complex and delicate interrelationships of human culture in its totality with that reflective interpretation of the same, which is philosophy. Its present divided and distracted character amongst ourselves philosophy shares with literature, morality, religion, political science, and the whole of our social organization. There is no unifying and dominating tendency in our literature to-day, if, indeed, we can be said to have a literature at all. Our social morality is in flux, indeed,

almost in a state of anarchy. Religion lacks unity, firmness, consciousness of its own convictions and aims. The theory of political and social organization is "all in the air." It is only in the exact sciences, technology, and industry, that we find coherence and unity of purpose and aim. Simplicity of data and poverty of aims secure for these disciplines their triumphant success.

A new culture is in travail, and philosophy shares in the travail. We can not clearly see the outcome until it arrives, but, in the meantime, to bring the work of the past to bear on the problems of the present seems to me to be one of the most indispensable ways by which philosophy can prepare itself to do its work in helping to self-conscious unity of expression and aim the new culture that is on the way. It is equally indispensable, of course, that the philosopher should sound the living movements of literature, morality, political and social organization, and religion, as well as the positive sciences. The study of historical evolution and the contemporary situation should quicken and illuminate one another.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Ethical Aspects of Evolution Regarded as a Parallel Growth of Opposite Tendencies. By W. Benett. Oxford. 1908.

This book, while on the whole well informed and well written, showing considerable originality, too, and being constantly stimulating and suggestive, is somewhat outside the pale of technical philosophy both in its manner and in its sophistication, and, accordingly, it may fail to appeal to such philosophers as strongly insist on their merely professional tests. Aside, however, from the refreshment that always comes with a little informality in the manner of a book, especially if literary grace and ordinary good sense are present, and aside also from the fact that in these latter days a certain informality has characterized a good deal of reputable and often important philosophical literature, the book here in review certainly supports a thesis and makes an important application of a thesis which nowadays can not have too much attention from all thinkers. Thus, Mr. Benett has put himself plainly in the company of those who are assailing the long-entrenched and the strongly-entrenched view that evolution is distinctly a linear process, a movement, whatever its seeming, and, at most, its only occasional set-backs, towards a certain goal. This goal, whether described in terms of coherence and heterogeneity, or in terms of a final perfect adaptation, or of ultimate happiness, or of human or spiritual supremacy, has always implied a gradual reduction of conflict, an ultimate elimination of all opposition. That such a result of evolution was consistent rather with an old-time orthodox theology than with the

positive facts of organic life or with the logical demands of the evolution hypothesis, which certainly forbid any complete and ultimate eliminations, was slow to be recognized, a long-standing habit of mind being apparently too strong to be overcome all at once. But at last such perfectionistic interpretation of evolution is giving way and, among many other things, the consequences to ethical theory are great.

According to Mr. Benett, evolution is the "equal and parallel progression of opposites" (p. 6 and Ch. I.) and, as to the absolute end or purpose of evolution, "at least as long as [the equal progression] is maintained it must be impossible to discover that end within the world of experience" (p. 16). A world whose process is always one of well-balanced opposites, such as adaptation and misadaptation (p. 23), pleasure and pain (Chap. II.), known purposes nad irreducible anomalies (Chap. III.), life and death (p. 106), individualism and socialism, or self-assertion and obedienee (Chap. VIII.), can hardly be said to be moving towards any discovered or discoverable goal. But, although thus without any visible end or direction, the world's process may still be significantly a forward one. "The essential property of forward evolution is increase of force" (p. 65). "The distinctive characteristic of forward evolution is not the elimination of defects, or the acquisition or preservation of advantages, but the parallel development of both defects and advantages, *accompanied by a continually increasing output of energy*" (p. 7, italics mine). And, once more, from the important chapter (VII.) on "Values and Final Causes": "The principle which first suggests itself as the main determinant in all the higher objective values is greatness" (p. 99), and in forward evolution characteristically there is "a continuous increase in all directions in size, and strength, and dominion over external nature, coupled with increased liability to disease and destruction by external nature; higher virtues, and lower depths of wickedness; a vastly increased volume of problems which have been solved, and of problems which await solution; increased simplicity of knowledge and increased complexity; wider generalization and a more minute specialization; increased power of individual action and increased strictness of subordination to the common aims of society" (p. 102). And the increase thus constituting forward evolution and suggesting, not merely an enlargement—intensive as well as extensive—of all the factors of evolution, be these seemingly positive or negative, but also the persistence of an equal conflict, or of equal conflicts, the ratio of opposition plainly remaining always constant, can mean only that the process (1) as involving a persistent balance is subject to a principle of conservation, if not of energy, at least of reality, and (2) as involving the increases has an end or purpose, although not a visible, or in any way determinable, one. The first of these meanings Mr. Benett neglects, but in the second he takes special interest. "Increase," he says, "... can not be regarded as an end in itself, and is only valuable as a means to an end" (p. 11), and the end, accordingly, to which it is a means must be transcendental (pp. 10, 103, *et sæpe*). "The transcendental purpose which the necessities of our existence compel us to assume as the final cause of all things can not be identified with any

human purpose and yet must be such a purpose as is implied in the fact, 'too patent to require proof,' that the increase in all the anomalous elements in our world of experience has been enormous" (p. 104). In other words, the increases and the oppositions, the oppositions and the increases, imply, not a purpose, but a real purposiveness, in general, that is, a transcendental purpose. Even so general a thing as life, ever more life, may not be said to be "the cosmic final end," unless, as few would readily understand such an assertion, life were so generally or so transcendentally conceived as to include or imply also death, ever more death, more certain death and more tragic death (p. 106).

So evolution has no assignable end. It may, indeed it does, have its lines, but it is not uni-linear or it is so only transcendentally, that is to say, as I have to understand, only in a way that includes and, with apologies for so much unction, sanctifies all its lines, or at once all its purposes and all its seeming "irreducible anomalies," making every one of these participate immediately in the one purpose. And this conclusion has an important outcome for ethics.

Nor is the outcome, as might be too hastily supposed, fatal to a genuinely teleological view or to a teleological method. On the contrary, although in this paragraph I may be interpreting rather than literally construing or expounding what Mr. Benett has said, it gives teleology a freedom which usually has been denied. Thus Mr. Benett's facts are certainly against a teleological absolutism. They are against the teleology of a uni-linear process. But he insists on the teleological point of view. "Our method . . . must be teleological, and our classification of objects as good or bad must be with reference to a final end which we locate in the future, and not with reference to the chain of past events" (p. 9). But "a purpose that intends everything that happens must be essentially different from human purpose" (p. 10). So Mr. Benett is plainly against any view that, presuming to select and assert some specific end or some ideal perfection as the absolute end, is thus either narrowly empirical or only abstractly and anthropomorphically idealistic *instead of strictly and truly transcendental;* and this position of his involves what I should call a freed or also a perfectly spiritual teleology and what would, at the same time, be quite consistent with experimentalism and even—only save the marks!—with pragmatism and pluralism. Must not the strictly and truly transcendental, whether as purpose or unity, as reason or ground, or as what any of the philosophers will, be wholly free from the limitation or mixture or taint of either isolation or exclusion? Can it be in character and still be aloof from the empirical? Intending everything, does not a truly transcendental purpose give a certain immediate reality and morality to everything, sanctifying, if again I may be forgiven my offensive unction, not only all conscious purposes, but also whatever challenges and opposes such purposes? From the other side, does not experimentalism, do not pragmatism and pluralism, make *the* end or purpose *perfectly* transcendental? Yet how poorly the supporters of these recent isms have seemed to know their own minds, outdoing—as they certainly have with their radical empiricism, and their immediate realism,

and their pluralism—the transcendentalism of certain less courageous contemporaries! But Mr. Benett's pragmatism or perfect transcendentalism —which now should we call it?—is, on the whole, implicit rather than explicit. He does not follow his own leading to its final outcome, although he does, I think, put up some very obvious signs.

To say the least, Mr. Benett claims for ethics—of course for an evolutional ethics—a wider view, a more comprehensive interest, than the teleological standpoint has usually imparted to it. His freed teleology makes this wider interest possible and natural. "The deeds and desires of men," he says, may be either good or bad, as the processes of nature are sometimes beneficent and at others destructive, but their value-judgments are always such as we might put in the mouth of forward evolution, could that be represented as a person reflecting with approval on his own behavior. The parallel development of adaptation and misadaptation, and the narrowness of the margin by which the organism at all stages of evolution maintains its existence against the hostile forces of decay and destruction, are reflected in the consciousness of man by the parallel *growth* of good and evil" (p. 16, italics mine). Thus, judgments of value are bound to be more liberal than judgments of what is *morally* good and evil, since the former have regard to what makes for forward evolution, while the latter are under the constraint, not of "the transcendental end," but, more narrowly, of some conscious human purpose relatively to which things are found beneficient or destructive. "It was not their moral qualities which gained for Julius Cæsar or Socrates their assured eminence; and it would be absurd to rule that all men ought to act as they acted. But of the value of their conduct there can be no question . . . [And by] following up this clue we arrive at the first universal dichotomy of ethics. All values fall into one or the other of two classes. They are values either of self-assertion or self-effacement, of ambition or of goodness" (pp. 16–17). If conscience, then, imply a feeling for value relating to the transcendental end, there must always be an opposition between conscience and morality (Chap. V.); and the maintenance of this opposition, but only with growth or increase of its two factors, is essential to forward moral evolution. Conscience, as against morality, would even be made so broad and so deep in its outlook as to see some good, some moral, or at least transcendentally, moral good in everything, that is, to find everything which is, right—immediately or transcendentally; and, after all, what does this mean, but that, for an evolutional ethics, since evolution is not uni-linear and since *the* end is transcendental, the law truly is for man, not man for the law, and that all positive morality is experimental? There are always larger values, than those of any line or law, waiting to be realized morally.

So does Mr. Benett interpret evolution ethically, suggesting, as has seemed to me, a moral experimentalism and even, in the sense that he insists on *the* one end being transcendental, a pluralistic teleology. That he does not always follow his own leading to its end I have already suggested, and this I should offer as a criticism of his book. His book, too, gives the impression of a certain aimlessness in its own procedure. The

chapters are stimulating and rather effectively they hammer away at the idea of parallel opposites, but distinct and effective development does not characterize their sequence. The last chapter, on "Measurements," is especially unfortunate in this respect, not merely because it is last, but also because, while possessing much interest and while not irrelevant, formally it is not an organic part of the book.

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My Inner Life, Being a Chapter in Personal Evolution and Autobiography. JOHN BEATTIE CROZIER. 2 volumes. London, New York, Bombay, and Calcutta: Longmans, Green, & Co. 1908. Pp. xiv + 288; ix + 274.

This is a book of unusual interest. It is the autobiography of a philosopher, begun when he was scarcely more than forty (p. 519), and completed while he was still in the prime of life. The story, so far as outward happening is concerned, is singularly uneventful. The boyhood of the author was spent at Galt, a village in the far west of Canada, where he received his education in the local grammar-school, then under the headship of Dr. Tassie, a graduate of Dublin University. Fitted for the university at seventeen (it is characteristic of the author that he does not mention what university) he remained only a week or two, having yielded, much "to the annoyance of his family and the disgust of his old master," to an overmastering fit of homesickness (p. 137). Four years later he returned to take up the study of medicine, which he continued later in London, apparently with considerable success, as he received an offer from a distinguished physician to be his collaborator in "certain scientific investigations," which, if successfully conducted, would have led him almost certainly to a medical lectureship (p. 280). But medicine seemed already too narrow a sphere for one whose imagination had been fired with the glories of universal knowledge. Accordingly, he refused the offer and, practising his profession only so far as was necessary to keep soul and body together, devoted himself to his studies, a record of which forms the major part of the contents of the book. From the exigencies of this hand-to-mouth existence he was delivered by the forethought of a grateful patient who, opportunely dying, left him a legacy sufficient to relieve his immediate necessities (p. 288). Later he bought "an easily worked practise" on one of the estates projected by Lord Salisbury, and there, with the aid of an assistant who relieved him of night work and dispensing, led for ten or twelve years an ideal existence, devoting his mornings to his patients, his afternoons to work in the special hospitals, and his evenings to study (p. 538 sq.). The story of his attempts to gain a hearing for his opinions when he had come to a definite conclusion in his search; of his visits to editors and men of letters; of his publication of a pamphlet at his own expense, the extra copies of which long furnished him with a supply of shaving paper; of the failure of his health and the threatened loss of his eyesight, and of his final success and recognition at a time when long-continued misfortune had all but brought him to despair, is related at length. We hear of a certain young lady who had

consented to be his companion in his philosophic search (p. 464), but who or what she was we are not informed. We learn too of trials which beset him in the later years of his practise, due largely to the pernicious custom of medical insurance which, attracting innocent souls by its promise of cheap medical treatment, robbed of their rightful sustenance not only those long established in the profession, but younger men who in their eagerness for present gain did not realize that they were killing the goose which laid the golden egg (p. 539 sq.). Beyond this we learn little of the author's outward circumstances. It is the story of his inner life which interests him and us.

Of the circumstances which led to the writing of the autobiography, the author gives the following account. Disappointed in the reception of his earlier work, he felt that if his "life-work were about to be thwarted either by sheer bad luck (as at that time seemed not unlikely), or by the indisposition of the public to consider unfamiliar doctrines when put in a purely abstract and impersonal way, it might still be possible to obtain consideration for these doctrines if presented in a different form. At any rate, like Sir Walter Scott, I felt that some fresh shuffle of the cards was necessary if my work were to go on at all, and in what other form than the autobiographical could I present my ideas unless indeed as a novel, in which, however, for want of space, justice could only be done to a small division of the subject" (p. 519).

It must be confessed that the choice of method was a happy one. The book is written with enthusiasm and in an entertaining style. The story of the boyhood of the lonely child in a remote village in the woods of Canada, has a singular attractiveness. The character sketches with which the book opens are vivid and lifelike. The abstract ideas, to the pursuit of which the author's best energies were given, are clothed with a certain genial human interest through the enthusiasm which he brings to their pursuit, and the vividness with which he realizes their presence. Even those who have no interest in Mr. Crozier's philosophy will find pleasure in reading the book, and will sympathize with the author's characterization of it when he says that "begun as it was at a time when my life-work seemed a failure, my health broken, my hopes desperate and my sky clouded by isolation and gloom, it was and still remains, like the David Copperfield of Dickens, the child of my heart" (p. 520).

There are three different points of view from which Mr. Crozier's book may be judged. We may look upon it as a human document, the story of the inner development of a life; we may regard it as a criticism of thought, a series of judgments passed by one thinker upon the work of others; or, finally, we may look upon it as a contribution to philosophy, a record of independent thinking upon the great themes of human interest. It is the last aspect of the book which will have most interest to the readers of this review. But, a word or two may be said of the two former as well.

Of the charm of the book as a human document I have already given a hint. The character whose picture is portrayed in its pages is one of singular naïveté, alertness, and interest. It is not every one who at forty

has gained such a sense of the importance for humanity of the story of his own inner development that he makes haste to record it in all its details lest the vividness of the first impression fade and so mankind suffer what might otherwise prove an irreparable loss. One is struck by the extraordinary range and freshness of Mr. Crozier's sympathies. Each department of human knowledge and experience—and in turn he traverses them all—excites in him the same intense interest, and upon each he brings to bear his own individual judgment with an independence as great as if no thinker had ever observed similar phenomena before. Coupled with this there is an accuracy of observation and of description which gives extraordinary vividness to the pictures drawn for us by the author's pen. The account of his visit to Carlyle may be cited as a case in point (pp. 376–393).

As a criticism of thought, too, the book has marked excellencies. In the course of his work the author has occasion to comment on most of the leading thinkers of the past and of the present, and what he has to say, if not always original or profound, is always fresh and interesting. His exposition of Emerson's teaching, for example, is unusually clear and helpful (p. 394 sq.). Mr. Crozier is master of a picturesque and luminous style, a style which he himself tells us was wrought out little by little by painful effort, as he discovered to his infinite surprise that men's eagerness for abstract thought, like their fondness for bitter medicine, is not so great that they are willing to receive either without a plentiful accompaniment of sugar coating.

When one comes to the value of the book as a permanent contribution to human thought one is more hesitant of passing favorable judgment. At this date in the history of philosophy it is not easy to add anything to the sum of human knowledge, and one approaches with a natural suspicion a book which, after passing in review the work of the great masters of the past from Plato to Spencer, sums up for us in a separate chapter "my contribution" (pp. 427–457). This contribution it is not easy to condense into a few words. It is, in brief, the effort to discover a scale for the measurement of values in the law of the human mind itself, and the application of this principle to the interpretation of the universe at large, with a view to discovering similar values inwrought into the structure of the cosmos. In the presence of this norm or scale, in the mind, but not of it, sitting as judge over values and assigning them their relative place, Mr. Crozier believes that he has discovered the permanent ideal, of which philosophy and religion alike are in search, the eternal in the temporal, which makes it possible to give both to the spirit of man and to the universe on which it is nourished, an abiding worth.

Most of the ideas with which the author deals will be familiar to the student of thought. The distinction between the order of facts and the order of values is fundamental to his thinking. This, he tells us, he learned from the poetic thinkers, by which title he describes men like Emerson, Carlyle, Goethe, and—singularly enough—Newman, but he criticizes them for giving too little attention to the physical structure of the universe and, above all, to the dependence of the human mind upon

the brain which conditions its activity. The necessity of recognizing this dependence at all points he learned from Spencer, and his attempt is to unify the causal view of the universe, which he gained from him, with the value judgments of the poets and the prophets, in such a way as to preserve the unity and proportion of values which make the world of our experience what it is and give charm and interest to life. His quarrel with "the psychologists" and "the metaphysicians," whom he classifies together under these comprehensive rubrics, is, that in their analysis of the processes of knowledge into their elements, they have dissolved the vital unity which we find in experience, and so are unable to give any fruitful interpretation of the actual world in which we live. What we want to know, he tells us, is not so much the elements of human knowledge, as the order and relations in which they meet us in actual experience, a power which the great dramatists like Shakespeare so signally possessed.

Those who desire to follow Mr. Crozier's thought further will find his opinions fully developed in his "Civilization and Progress," and in his "History of Intellectual Development on the Lines of Modern Evolution," of which the first and third volumes only have as yet appeared. Whatever may be our judgment of his solution of the problem he proposes, there can be no doubt that it is one of cardinal importance, and, in these days of elaborate specialization, it is refreshing to be recalled to the larger aspects of the philosophical problem which render it of perennial interest to all educated men.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. August, 1909. *Pour et contre la psychophysique* (pp. 113–149): DR. J. PHILIPPE.–A discussion of the justice of the attacks made by J. J. van Biervliet and by G. Sorel on psychophysics, and a defense of this science. *L'idéalisme sociale* (pp. 150–179): R. BRUGEILLES.–Society can not exist without ideals and the individual should subordinate himself and work for the progressive realization of the social consciousness. *Sur la nature du plaisir* (pp. 180–192): TH. RIBOT.–An examination of the causes for the poverty of the psychology of pleasure as compared with the psychology of pain. *Notes et discussions. La synthèse psychique et la finalité:* F. PAULHAN. *Analyses et comptes rendus.* A. Rey, *La philosophie moderne:* G. MILHAUD. Dr. J. K. Kreibig, *Die Intellektuellen Funktionen:* J. SEGOND. Jules Combarieu, *La musique et la magie:* CH. LALO. Emil Utitz, *Grundzüge der aesthetischen Farbenlehre:* L. ARRÉAT. Tisserand, *L'Anthropologie de Maine de Biran:* H. DELACROIX. Auguste Diès, *La définition de l'être et la nature des idées dans "le sophiste" de Platon:* C. HUIT. G. Zuccante, *Socrate:* C. HUIT. *Revue des périodiques étrangers.*

Bulletin de l'Institut Général Psychologique. Paris: Au siège de la Société. 9e Annee. No. 3. June–July, 1909. Pp. 355 + 466.

Eucken, Rudolph. *The Problem of Human Life.* Translated by Williston S. Hough and W. R. Boyce Gibson. New York; Charles Scribner's Sons. 1909. Pp. xv + 582. $3.00 *net.*

NOTES AND NEWS

Six hundred persons attended the Sixth International Congress of Psychology, which met at Geneva during the week of August 3–7. The question of the determination of colors was put in the hands of an international committee consisting of Professor Nagel, of the University of Rostock, Professor Asher, of the University of Berne, Professor Thiery, of the University of Louvain, Professor Larquier, of the University of Lausanne, Professor Yerkes, of Harvard University, and a chemist to be selected by the committee. The following committee was appointed to consider the question of psychological terminology, to prepare a draft of equivalent terms, and to draw up propositions relevant to the question: Professor Baldwin, Professor Claparède, Professor Ferrari, and Professor Lipmann. The following resolution was unanimously adopted: "All persons who create a new word belonging to the vocabulary of psychology should construct the word so that it, or a word closely resembling it, may be adopted by the chief languages." The seventh meeting of the congress is to be held in the United States. A committee of organization has been appointed consisting of the following officers: honorary president, Professor William James; president, Professor J. M. Baldwin; vice-presidents, Professor Edward Titchener and Professor James McKeen Cattell; general secretary, Professor J. B. Watson.

The following French editions of philosophical books are of interest: several of the works of Schopenhauer appearing in the volume entitled "Métaphysique et esthétique" in the "Bibliographie de philosophie contemporaine." This volume will contain "Doctrine de la connaissance et métaphysique," "Spéculation transcendante sur l'apparence," "Préméditation qui règne dans la destinée de chacun," "Pensées se référant a l'intellect," "Métaphysique du beau et esthétique," "Sur l'intéressant"; a translation of "Précis de Psychologie de M. William James," by MM. Baudin et Bertier; and a translation of Schiller's "Studies in Humanism."

Among the Englishmen to receive the degree of doctor of philosophy at the recent celebration at Leipzig were Sir Archibald Geikie, the geologist and Dr. James Ward, professor of philosophy in the University of Cambridge.

At the recent meeting of the Paris Academy of Science on August 18, the permanent secretary gave an eulogy of Professor Simon Newcomb. Professor Newcomb was a foreign associate of the academy.

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PSYCHOLOGY AND SCIENTIFIC METHODS

ON THE METHODS OF APPLIED MATHEMATICS

THE views expressed in this paper are not consciously derived from those of previous methodologists, but from an examination of the concrete processes of mathematical physics. As they are to that extent original and as, moreover, the form is different from that of the majority of logicians, no useful purpose would be served by reference to works in which it might be possible to discover the germs of some of these ideas.[1]

Nor is this essay in any way connected with the conflicting theories of knowledge or with controversies on the logical nature and philosophy of pure mathematics. Its special feature is the separation of the methodology of applied mathematics from these more speculative considerations, and the result is that the former stands out in a clearer light and attains greater relevance to the actual problems of mathematico-physical investigation.

Whatever may be our opinions concerning the ultimate nature or origin of mathematical reasoning, it would be impossible to deny that it is actually, practically, a series of abstractions. Though the axioms may be necessary, and the reasoning may possess intuitive and absolute validity, this validity is conditioned by the abstractions themselves, and the applicability of the conclusions to any particular existences in the object world is not necessarily implied in the process of mathematical reasoning.

Even in simple cases this can readily be illustrated. The simple arithmetical statement that $2 + 2 = 4$ is a definite unassailable truth of the conceptual order. The concrete application $2d + 2d = 4d$ would be false unless the objects to which it was applied were definite, separable, discrete units which admitted of addition. If, for example, we attempted to apply such arithmetical reasoning to the number of seas or gulfs in the Mediterranean, it would obviously give us a false, meaningless, or invalid result because there is no criterion by which

[1] The nearest approach to an anticipation will perhaps be found in Jevons's "Principles of Science," Chapter XXI. Between that statement and the following there are, however, a number of important differences.

we could say when and where one gulf was contained in or graded into another. The necessary discrete units are nowhere to be found.

It will thus be seen that it is possible, by too close an attention to the conceptual series, to make serious errors in the application of even the most elementary mathematical truths. According to such a strict logical rendering, simple addition is a "pure" mathematical process of absolute conceptual validity, compound addition is a mixed mathematical process dependent on the fact that we actually deal with perceptual discrete units to which the reasoning can be applied. In simple cases of this kind, it would be pedantic to insist on the distinction, but, for logical consistency, it is easy to point out that even here it is valid.

The example of mathematical reasoning in which the conceptual and perceptual elements are most entangled is geometry. This science, dealing as it does with existence under its simplest aspect of extension in space, gives us conceptual truths that are almost universally applicable to the perceptual world and can be verified to a high degree of approximation by experiments with lines drawn on paper. When applied to actual existences, such truths require some small qualifications which are necessitated by the structure of the substances used. The universal applicability of the truths of geometry depends on the perceptual fact that such qualifications are, as a rule, so small as to be practically negligible. Even in geometry, the modern development of fourth dimension and non-Euclidean applications shows that the conceptual series may outrun the perceptual and give us conclusions that have no valid meaning in the object world.

According to this view, the distinction between pure and applied mathematics is one of degree and of convenience. All mathematical reasoning is "pure," and all application is "mixed." In some cases, however, the applicability of the method is so obvious that it can be taken for granted; in others the discussion of the range within which the ideal construction is applicable to concrete instances is a difficult and complicated problem, only to be settled by prolonged and careful experiment, observation, and reasoning.

The starting-point of the present investigations can therefore be summarized in the following three propositions: (*a*) Mathematics is a series of abstractions, a conceptual series of truths, the validity and *a priori* certainty of which is self-contained and conditional on the ideal nature of the construction; (*b*) common knowledge and its outgrowth, experimental science, is a series of truths of a different order. Some may be *a priori,* but most are discovered by the intelligent observation of the object world; (*c*) the inter-relation of (*a*) and (*b*)

is variable, and is dependent on the nature of the abstractions and of the facts of observation and experiment to which they can be applied.

We will now consider our third proposition more closely and see if we can discover any general rules and conditions which will throw light on the nature and necessary limits of this inter-relation. A number of these are immediately apparent. If, for purposes of calculation, we abstract from the totality of our experience certain general properties and work these into our conceptual series, it is obvious that the range within which our concepts admit of valid application depends on the range and certainty of these abstractions.

All Euclidean geometry is built up of a very few of these assumptions, which can be reduced to the fundamental axiom of quantity, Playfair's axiom, and some other self-evident truths. These, according to my own view, are *a priori* in the experience of the race; but, for those who still retain the preevolutionary empiricism of Mill, we can merely say that they are invariably consistent with experience. No one could doubt that for practical purposes their certainty is absolute. So far as the conceptual series includes these and no others, there is no practical limit to the length of the chain of reasoning that can be based on them. At any link in that chain, the conclusion could be verified by actual measurements which only vary from the ideal by the necessary limits of experimental error.

A few, a very few, physical axioms have this same degree of validity. In this class I should place the law of inertia, the conservation of matter (or inertia)[2] which is closely related to the former, and the conservation of energy. These are generally admitted to be of universal applicability, and, so far as mathematical reasoning is based on these, its validity would be as great as that of Euclidean geometry.

One or two other principles, while not *a priori*, possess an empirical validity practically universal. The law of gravitation is perhaps the best example of these, and here again there is no recognizable practical limit to the possibility of application to actual existences. But even here an element of uncertainty will creep in. A calculation based on the continual existence of any portion of ponderable matter would only have approximate validity if carried into the infinities of space and time. It is quite conceivable that matter may evolve from and dissolve into the ether of space. To admit this possibility we must postulate inertia as a property of the ether, but the possibility is there none the less. It is not likely that any actual calculation will be invalidated by such an error, but it well illustrates

[2] Stated in this form, the principle admits the possibility of the evolution and dissolution of ponderable matter.

the empirical nature of mathematical investigations to point out that, at this early stage, we find a limit to its practical certainty.

It will be seen that no series of physical calculations can possess the same range of applicability as ordinary Euclidean geometry. There is no geometry of mass. In theoretical mechanics we have no doubt a conceptual science which, so far as it is based on physical and geometrical axioms, would possess an equivalent theoretical certainty; yet the transference of the conclusions from the conceptual to the perceptual series contains numerous possibilities of error. Outside the limits of statics and dynamics, the validity of physical laws falls off rapidly. All the ordinary generalizations of physical science, laws of radiation with temperature, of conduction of heat, of relation between chemical and physical properties, of electric potential and current, all these, when they are not definitions in disguise, are avowedly empirical approximations applicable to actual existences only within reasonable and recognized limits. Any undue extension of these requires careful and critical treatment, and, if far removed from the possibility of verification, should not be regarded as definite and established truth.

So far we have dealt only with the certainty of the premises, the degree of validity *a priori* or otherwise of the abstractions from which the argument took its origin, and the consequent danger of error from the fact that these premises themselves correspond only imperfectly to actual existences in the object world. Any error on this score would imply a limit to the possibility of concrete applications. But the vast majority of mathematically established deductions not only imply the theoretical possibility of concrete application, but the statement that the abstractions provide an adequate correspondence to concrete reality.

We can readily illustrate this by reference to astronomy. All calculations of gravitational astronomy are not only dependent on the law of inverse squares and the continued existence of an invariable quantity of gravitating matter, but on what we may term a number of existential propositions concerning the actual system to which the mathematics is applied. These calculations also require the disputable and even false premises that the sun and planets are unchangeable in mass, suffering neither loss nor gain; that there are no sources of gravitational force other than the sun and the planets; and that there are no forces other than gravitation which can affect the relative position of celestial bodies. The last in particular is certainly wrong. Gravitational theory will not account for the position of the tail of a comet nor (probably) for the distribution of a spiral nebula, yet these astronomical calculations are the most accurate known to science.

The possibility of an extended series of astronomical calculations depends on the empirical fact of observation that all these sources of error are, for ordinary limits of space and time, so small as to be practically negligible. But, even here, any attempt to calculate the exact relative positions of the planets, say a million years ago or a million years hence, would rightly be received with some considerable degree of scepticism.[3]

All applications of statics and dynamics to actually existing bodies and forces are subject to a similar series of existential assumptions.

It will thus be seen that the possibilities of the interrelation of our conceptual and perceptual series is subject to two necessary limits: (1) That the abstractions on which the reasoning is based have, in a very small percentage of cases, absolute intuitive certainty or intrinsic accuracy; (2) that the concepts are never complete abstractions from reality, and the degree of completeness can only be determined empirically by observation and experiment. Of these two necessary limits, the second is, in normal cases, probably of the greatest practical importance; but both must be noted as theoretical sources of error.

An attempt to calculate the volume of a gas at 1,000 atmosphere by Boyle's law, or to discover the conditions of the atmosphere 500 miles above the earth's surface by the law of diffusion,[4] would undoubtedly come under the first heading. These principles are both empirical laws of limited applicability. A calculation of the age of the earth by secular cooling, or of the position of Halley's comet 5,000 years hence from its present velocity and position and from the gravitation of the sun and other calculable centers, would be invalid from the second cause. The abstractions in each of these cases would be entirely inadequate for the complexity of the problem to be solved.

For the remainder of this article, however, we shall not trouble

[3] I lay no great stress on this suggestion which would require great mathematical analysis to follow to its conclusion; but is it not possible that Leverrier's calculations regarding the periodicity of the variations in the eccentricity of the earth's orbit may be invalid on this account? While his calculations are probably approximate in relation to the last glacial epoch, is it not possible that, through the multiplication of such minute errors as change of orbit due to solar tidal reaction, or gain of mass due to access of meteorites, the greater changes in the eccentricities of planetary orbits may not be periodic at all, but irregular and incalculable. If this suggestion be correct, it may throw light on the geologic problem of the irregular occurrence of glacial epochs, and Croll's hypothesis may be correct in spite of this difficulty.

[4] The law of diffusion depends on the straightness of the path of the individual molecules, which would be curved by gravity if molecular impact were infrequent.

further with these distinctions. It is possible that, if approached from a standpoint less practical than that of the present paper, they might be shown to be part of a larger principle. Whether this be so or not, we shall find that their practical importance will be increased or decreased by similar causes and conditions.

Here is the next step in our investigation. Having discovered two necessary limits to the interrelation of the conceptual series of mathematical abstractions and the perceptual series of facts of observation and experiment, we must now endeavor to ascertain when and to what extent these limits are of definite practical importance. This it is impossible to accomplish completely in general terms. The necessary limits of mathematical investigation vary in incalculable ways with the nature of the special investigation. But, though such an aim can only be accomplished to a limited extent, it is, I believe, possible to lay down general rules, some of which we shall find are immediately applicable to the subject of this essay.

Such general rules will be best elucidated by the critical analysis of special concrete instances in the light of the foregoing principles.

Let us take, as an example, the simple kinematical formula for calculating the distance covered by a falling body ($s = \frac{1}{2}gt^2$). A very elementary knowledge of the facts will show us that this useful little formula will only serve our purpose within a very limited range. Immediately one of the variables is increased beyond a definite limit, a correction must be introduced for the resistance of the air. This, indeed, is so difficult that I doubt whether it has been attempted. But a moderate approximation would imply a complicated differential, including (at least) a variable for the density of the atmosphere, another for the velocity of the body, and (assuming a definite shape) a constant for the ratio between the mass of the body and its surface area.

Let us imagine these difficulties to have been overcome, or the calculation to refer to a planet without an atmosphere. We shall find that, when the distance exceeds a very moderate amount, we need to introduce a variable for the force of gravity which decreases with the square of the distance. Finally, at a height still greater, it is necessary to allow for the perturbing influence of the sun and of other gravitating bodies. In cases of this kind, the practical mathematician relinquishes the problem as insoluble and adopts the short and easy method of finding the theoretical velocity of a particle to infinity.

In this particular instance, it will be seen that the value of our useful empirical formula is, within a very limited range, very great; beyond that, for another limited range, it will answer fairly well, subject to a manageable correction; and finally it breaks down en-

tirely, and the only way of obtaining the faintest clue to what really happens is by a method of approximation.

The errors are cumulative and after a certain limit entirely destroy the validity of the formula.[5]

This example shows us, lying on the surface of our subject, that one factor which limits the applicability of mathematical formulæ to actual entities is the magnitude of the terms and, particularly, of the simple fundamental variables space and time. Whenever a formula is applied beyond the ordinary limits of space and time, its value is doubtful, and if this extrapolation be carried out indefinitely, the applicability is entirely destroyed. While the results are still true as an ideal construction, considered as pure mathematics, they cease to have any bearing on actual perceptual existence.

This property can be illustrated by any physical formula applied to concrete problems. The simple relation between the power and weight in a lever and the distance of each from the fulcrum, will, as a rule, work without serious correction for a bar five feet long. For a bar 50 feet long corrections would be required for the weight of the lever and its lack of rigidity. For a bar 500 feet long, the formula would be useless.

The law of sines is applicable to simple cases of refraction in prisms and lenses, but, though still ideally true, it gives us little assistance in unraveling the interesting natural phenomena of mirage and fata morgana.

Joule's formula, expressing mathematically the first law of thermodynamics, is theoretically (except for the experimentally determined magnitude of J) an allotropic form of that most certain of all physical axioms, the conservation of energy; but it is a truism to say that the limits within which it will express the amount of heat that we can actually obtain in a measurable form, are almost vanishingly small.

From instances like these, which can be multiplied indefinitely, we can infer that, both by reason of the abstractions contained in mathematical formulæ as such and by reason of the complexity of the perceptual world to which they are applied, the applicability of each and every calculation is strictly limited, and, if its terms be multiplied indefinitely, it must necessarily break down and cease to provide any recognizable correspondence with objective fact.

[5] I do not know whether the problem is insoluble, but any one who would calculate the velocity necessary to carry a particle into the sphere of gravitation of the sun, would introduce a large correction into speculations concerning the escape of planetary atmospheres which are now based on the theoretical "velocity to infinity." (Cf. papers by Dr. Johnson Stoney, *Astrophysical Journal*, 1898, and elsewhere.)

In the whole range of mathematical physics, there can not be found a single calculation which can be trusted to be accurate if carried too far from actual objective fact and from the possibility of verification. This indeed is the method of all science. Our abstractions, our calculations, must continually be brought into contact with the new particulars of fact which have been deduced from the abstractions. So far as this is done and so far as this is possible, theoretical questions concerning the necessary limits of mathematical reasoning do not arise in practical work. The limits are plain and obvious and inherent in the character of the work. The existence of facts of observation and experiment by which the theoretical conclusions of mathematical deduction can be tested and verified provides a practical check which effectually prevents undue and illegitimate extensions. It is only when these methods are applied to hypothetical happenings in the far distant realms of time and space, where there is no possibility of direct verification, that the examination of theoretical limits accomplishes, not only the intellectual purpose of aiding the comprehension of the intrinsic nature of scientific method, but the practical, every-day, useful work of providing a wholesome criticism and check on illegitimate speculation which takes upon itself the form and appearance of mathematical precision.

The danger of carrying deduction too far from the sphere of direct verification is recognized in discussions concerning the validity of extrapolation. All prediction is in one sense extrapolation, and all extrapolation possesses a certain theoretical uncertainty; but it is generally recognized that, within certain limits, this method is allowable.

One principle guiding the range of such deductions is found in the difference between rational and empirical formulæ. Extrapolation is much more valid with the former; but, as we have already seen, this distinction is merely one of degree. All but a very few have some elements of empirical or observational uncertainty. The well-known fact that extrapolations are regarded with considerable suspicion by practical scientists, and that such have so often proved mistaken, well illustrates the contention of this thesis.[6] Indeed, this well-known rule can be regarded as merely a particular case of the more general principle, that the applicability of all mathematico-physical formulæ is bound by ordinary limits to the magnitude of the terms, and particularly of those fundamental variables space and time.

[6] Chemists will remember a striking instance of this in the determination of the temperature of liquid hydrogen. This was at first determined by Professor Dewar many degrees wrong by an extrapolation of an empirical conductivity formula.

So far we have been concerned only with simple mathematico-physical formulæ. It now remains to consider the bearing of these principles on more complicated forms of such deductive reasoning.

The complexity of a mathematical formula may be due to one or both of two possible causes. Its complexity may be occasioned by the process of successive approximation. A simple ideal formula, like that representing the fall of a body under gravity, may have added to it a number of corrections in order to enable it to calculate with greater accuracy the actual happenings in a world where such ideal conditions do not prevail. Such a formula bears on the surface evidence of its empirical character, and obviously will not admit of extensive extrapolation.

Another type of complex formula derives its complexity from deduction from more fundamental principles. Its theoretical certainty then depends on the foundations and on the process of deduction. For the range of this type no general rules can be assigned. This can only be determined empirically by a careful examination of its pedigree. To examine this for any particular formula is a problem which belongs to mathematics rather than to methodology.

Leaving this question of theoretical certainty, and confining our attention to practical applicability, it can readily be seen that a complex formula contains sources of error inherent in its own complexity. No detailed acquaintance with practical mathematics is requisite to perceive that every separate variable introduces an additional source of error, and that the error is increased as the grouping of the variables become more and more complex. A slight error in a factor of a complex differential produces a more than proportionate error in the result. It therefore follows that, assuming the same degree of theoretical certainty, the practical value and range of a mathematical formula decreases with each increase of complexity. A complex differential is not inherently superior to a simple formula, but is a useful instrument of investigation where no simple formula is available. Every separate variable introduces a new possibility of error, as does also the more complicated relations of the factors involved. For the purpose of obtaining an approximate solution to such a cosmic problem as the age of the earth, methods dependent on complex differentials are, other things being equal, inferior to those based on simple arithmetic.

At this point the present investigation ends. The fallacies inherent in the illicit mathematical treatment of cosmic problems have been traced to their theoretical source. In so doing, we have glanced at a number of theoretical questions and thrown out from time to time suggestions on which varying stress has been laid. It will now be convenient to sum up the main conclusions.

We have seen that, whatever may be its philosophical meaning, mathematical reasoning is an ideal construction, a series of abstractions, the validity and *a priori* truth of which is strictly limited to the conceptual sphere.

It is also clear that common knowledge and experimental science are a system of truths, largely based on observation and experiment, belonging to a perceptual series of an entirely different order.

All applications of mathematical reasoning to physical problems or to actual existence of any kind are, therefore, a more or less conscious fitting of the conceptual to the perceptual system. This process of fitting is subject to certain theoretical sources of error. These, which are commonly avoided by the continual contact of theoretical deductions with new detailed fact, are of special practical interest when such direct verification is only partially possible. Of these sources of error the following are of special interest: (1) the validity of mathematico-physical formulæ is dependent on the range and theoretical certainty of the physical or other principles involved in the premises; (2) it is also dependent on the completeness with which the conditions relevant to any particular problem have been abstracted from reality; (3) both these sources of error are increased with the complexity of the formulæ and with the magnitude of the substituted terms; (4) in cases of extensive extrapolation, such formulæ are liable to give not only minor errors, but results which bear no recognizable relation to concrete reality.

The essence of a methodological investigation lies in the possibility of concrete application. This little essay is an attempt to bring into closer relations methodology in the abstract and scientific method in the concrete. Though to the philosopher there may in the preceding pages appear to be but little of striking novelty, yet if these simple principles be fearlessly applied, it is clear that they will necessitate the reconsideration of much that has passed current as the outcome of scientific precision. Methods of finding the age of the earth by secular cooling, and much other cosmological speculation, appear in its true light as doubtful theory. Indeed, all acquainted with the multitudinous applications of mathematical reasoning to the complexity of the universe around us can, for themselves, find countless other examples.

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MAY A REALIST BE A PRAGMATIST?

III. The Implications of Psychological Pragmatism[1]

IN the second article of this series we endeavored to formulate the implications of "biological pragmatism" or instrumentalism, the first of the four types of pragmatic doctrine which were set forth in the introductory paper on the definitions of realism and pragmatism. We found that the instrumentalist theory of the origin of thought definitely implied the realistic point of view, and that in itself it afforded no support to a subjectivistic interpretation of either the proper method or the proper scope of cognitive activity. We have next to consider the implications of

Psychological Pragmatism.—This view, which was also entitled the motor theory of truth, asserts that the *truth* of a belief is identical with its *verification,* or—the *being* true of a belief is identical with the process of experiencing or *finding* it true.

It is the same thing for a belief to be true and for a belief to be verified, *i. e.,* experienced as true? Here for the first time we come upon a form of pragmatism that is on its face definitely anti-realistic. For both pragmatist and non-pragmatist admit the truth is a relation of agreement between a belief and a reality. The psychological pragmatist declares that this truth relation of agreement consists in being experienced. Its *esse* is *percipi.* No belief can be true antecedently to its being proved, for, by definition, truth equals proof or verification. Realism maintains, as we have seen, that the reality of a thing does not consist in its being known. And this applies equally to specific facts and to relations between those facts. A *belief* in the roundness of the earth was a fact in the minds of some of the ancients. The roundness of the earth is now itself admitted to be a fact. There is and was the relation of agreement between the belief of some of the ancients and the reality. Consequently, we say that the belief was true. Now, is it possible to regard this relation of agreement as non-existent prior to the time when it was verified by the circumnavigation of the globe? Only a subjectivist can so regard it. But, it may be answered, what does this relation of agreement between belief and reality *mean,* except the successful leading of the belief to the immediate experience of the thing believed? To which we may in turn reply: How could a belief lead successfully to the thing believed, unless it had been in some sort of agreement with it beforehand? A key proves to be the right key because it fits into the lock. Is it just chance that we can fit it into

[1] For the two preceding papers of this series, see this Journal, Vol. VI., pp. 460–463 and 485–490.

the lock? No, there is a reason for it. And the reason is that the conformation of the key corresponds to the conformation of the lock. The pragmatist never seems to raise the question *why* some beliefs lead us successfully to our facts and others do not. And yet the need of raising this question and the kind of answer it requires are both so obvious. The belief does not lead up to the fact by chance, or for no reason, any more than the key fits into the lock by chance. The reason the belief leads up to the fact is because the relation preexisting between it and the fact is like the relation preexisting between the key and the lock, namely, a relation of conformity or correspondence. This may appear more plainly from the following illustration: Two travelers desirous of reaching an inn as quickly as possible come to a fork in the road. A declares his belief in the easterly road being the shortest. B disagrees and declares for the road westerly. Deciding to test their theories pragmatically, they separate. B reaches the inn first and asserts triumphantly that the successful issue of his belief proves its truth. It turns out, however, that on the road taken by B there was a man with a wagon who gave B a lift, while A's road was solitary. Did the successful leading of B's belief constitute its truth?

Now, I suppose that the pragmatist will laugh at this little tale as a sample of the way in which an intellectualistic criticism can miss the point. I should quite agree with him as to the injustice of my illustration if intended as a *reductio ad absurdum* of his position. But the real point that I wish to bring out is the ground on which the pragmatist would condemn the example as unfair. He would doubtless say that it was not B's belief itself which led to his reaching the inn first, but rather the fortuitous and perfectly irrelevant fact that the wagon happened to be on his road, and that consequently the belief in that road being the shortest had not been tested at all. Such a reply, however, reveals a tacit assumption with which the pragmatist qualifies his definition of truth as the leading of a belief to a successful result. The successful consequences constituting the truth of a belief must be due to the nature of the belief and not to any outside or adventitious circumstances connected with it. And now in the light of this qualifying assumption we may ask again: How could a belief be of such a nature as to lead to its own successful confirmation in immediate experience except by being in antecedent agreement with the objects immediately experienced?

I imagine that the pragmatist may at this point interrupt somewhat impatiently with some such remark as the following: We will grant that there is a sense in which a belief or judgment must be in agreement with reality prior to its verification in experience, but

the only way to describe that antecedent conformity is to describe it as the possibility of verification. The potentiality of verification is, if you insist, the antecedent truth of an idea from which its actual verification results. Opium produces sleep because of something antecedently present in its nature, but that antecedent property of opium can only be described as its dormitive virtue. To say that opium produces sleep because of its soporific virtue is not any more enlightening than to say simply that it produces sleep. It is, then, at best nothing more than a verbal and barren victory which we have gained over the psychological pragmatist in forcing him to admit a distinction between truth and verification. Now, this reply of the pragmatist has considerable force. Just as Mill may be said to have made no substantial advance beyond Berkeley and Hume when he defined a material object as a permanent possibility of sensations as distinguished from the mere intermittent actuality of those sensations, so we shall have made no substantial advance beyond the identification of truth and verification if we are forced to define our antecedent truth as merely the possibility of verification. In short, the pragmatist extends a perfectly fair and honorable challenge to his opponent either to define the truth relation in some other way than in terms of a verification-experience (actual or possible) or else to confess himself beaten. I think that this challenge, fairly given, may be as fairly met—that it is possible to describe in independent terms the actual nature of the relation between a belief and a reality which makes possible the future verification of that belief. But before undertaking to do this concretely and specifically, I should like to remind the pragmatist of a general point in this connection which has been often made, and never, so far as I know, refuted. *There is no such thing as a mere possibility or potentiality.* A is never the possibility of B except in virtue of possessing also some actual nature of its own. The egg is not a bare potentiality of a chick. It is also an egg, which is something just as actual as the chick of which it is the potentiality. The soporofic potentiality of opium consists of certain quite actual intramolecular relations, the specific nature of which it is the business of the physiological chemist to ascertain. So, also, the potentiality of the verification experience must be a certain actual relation between the thing believed, and the thing that exists; and it is now squarely up to us to define the specific nature of that relation. I think that this can be done very simply, as follows:

We know that it is possible for one thing to stand in two or more different relations—to have membership in two or more relational contexts or systems. One man can be president of the United States and also a hunter of big game. One bottle can occupy the center

of a table and also contain ink. One number, 30, can be 3×10 and also $28 + 2$, etc., etc. When one thing is considered now in one context and again in another context, we make the judgment of identity. "A is identical with B" means that there is a something, *m*, which in the context α is called A and which in the context β is called B. Because A and B denote one thing in two contexts they are said to stand to one another in the relation of identity. Now consider any thinkable or experienceable *content, e. g.,* "land westward of Europe." This thing or content can occupy two relational contexts. It can have (and no one doubts that it does and did have) membership in that single, infinite, and all-inclusive, totality of spatially and temporally related contents which we call "the existing world," or "the world of facts." It could have (and no one doubts that it did have) membership in the system of "things believed by Columbus." *When one content is the object of a belief and is also a thing that exists, there subsists between the content as believed and the content as existing that particular form of the relation of identity which is called* TRUTH. To say that a belief when true "corresponds" to a reality, means that the thing believed is identical with a thing that exists. Columbus believed that there was land westward of Europe. His belief was true for the reason that what he believed happened to be a fact. When we believe in a thing that is a fact, our belief is true. When we believe in a thing that is not a fact our belief is false. So much for the definition of truth. How, then, is verification related to it? One thing can stand in the belief context and also in the existence context without that duality of context being experienced. But it is equally possible for the duality of context to be itself the object of a single experience. This last is verification. *When a thing is experienced by a person to be both a fact and a thing believed, then the belief in that thing is* VERIFIED. Before America was discovered Columbus's belief in land west of Europe was a true belief, because it was a belief in a fact. But it was not a verified belief, because no one had experienced land west of Europe as both an object of existence and an object of belief. Because the belief was true and also because Columbus had courage to take steps to test it, it came to be verified. The thing that Columbus believed was at last experienced by him as an existent fact. The belief was not made any more true by being proved; it would have continued true whether America had ever been discovered or not. Its truth constituted, to be sure, the possibility of its being verified, but we have answered the pragmatist's challenge to describe that antecedent truth relation as something in itself actual and not as a mere potentiality of verification. Indeed, when confronted with the statement that the truth of a proposition is the same as its proof,

one is tempted to remind the pragmatist of a caution always given to the students in formal logic. I mean the caution against confusing the failure to prove a proposition true with the disproof of its truth. If truth were identical with verification we could disprove the truth of a conclusion by simply showing that the premises adduced in support of it were insufficient to prove it.

The only way, so far as I can see, for the psychological pragmatist to justify his identification of the truth of a belief and the experience of proving it true, is for him boldly to maintain the subjectivistic interpretation of the relation of identity. Does the identity of a believed thing and an existent thing have its *esse* in *percipi*? Is it impossible for two things to be identical except when they are experienced as identical? Does the perception of agreement between belief and reality create the agreement perceived? The psychological pragmatist must answer these questions in the affirmative. What justification there is for ascribing to our experience the extraordinary power of creating relations of identity between the facts experienced, I, as a realist, am unable to understand. Why (barring illusions) should two things be perceived as identical unless they were identical?

Now when one is unable to find any adequate logical evidence in support of a theory, one is irresistibly tempted, in the interest of a clearer understanding, to seek the extra-logical causes of its origin. I believe that there are two factors which have been largely operative in leading pragmatists to identify truth and verification. One of the great props of modern subjectivism consists in the failure to distinguish between the *ratio essendi* and the *ratio cognoscendi*. Berkeley, in one of his dialogues [I have not the text at hand and must rely on memory] imagines himself to question a peasant as to why he believes in the existence of his cherry tree; the peasant is made to reply that he believes that the tree is real because he can see it, touch it, and taste its fruit. This is taken by the author as implying that the plain man, when uncorrupted by a realistic pseudo-philosophy, instinctively identifies the material world with his sense-perceptions. Because he perceives the cherry tree, he says it is real. To be sure, but he means by this that his tactual and visual perceptions are the *ratio cognoscendi* of the tree, not at all its *ratio essendi;* more simply, they are the cause, not of the tree's existence, but only of *his belief* in the tree's existence. The confusion stands out clearly enough in the following case: We believe that it has rained during the night because we perceive in the morning that the road is wet. The perceived wetness of the roads is the *ratio cognoscendi* of the rain during the night. To say that it was its *ratio essendi*, to ascribe to the *wet look* of things in the morning the power of creating what happened the night before would seem absurd enough. And yet a

very considerable number of the arguments of Berkeley and also of his successors, both German and British, are embodiments of this same confusion. Would the pragmatist regard the attempt to distinguish sharply between *ratio cognoscendi* and *ratio essendi* as one of the verbal and barren subtleties of intellectualistic logic? I do not know. But certain it is that if he would consent so to regard it, his own thesis could be established finely. For it is undeniable that the verification of a belief is our only ground for knowing it to have been true; it is its *ratio cognoscendi* and if that means its *ratio essendi* also, why then verification is what constitutes truth.

The second factor that may serve to explain the rise of psychological pragmatism rests on a consideration that was mentioned in the first article of this series. Pragmatism is primarily a protest against absolutism, and the polemics of the pragmatist are directed so exclusively against the absolutist that the possibility of there being a position different alike from absolutism and pragmatism is usually overlooked. The absolute idealist conceives of truth as a fixed and unalterable system of ideas, contained in an eternal consciousness, whose proper nature remains forever above and beyond human experience. With considerable skill the pragmatist attacks this conception as an assumption that is at once gratuitous and useless. The inaccessible truth contained in the mind of a hypothetical absolute is surely not our human truth, nor can it by definition ever be used as a check for our human errors. This absolutistic truth seems to be the only kind of *objective* truth that the pragmatist recognizes, and the only alternative to his own conception. To define truth as a certain type of human experience seems preferable to defining it as something that we can never experience at all. It never seems to occur to the pragmatist that not every one who conceives truth objectively finds it necessary to invent an absolute as a safe hiding place for that truth. Truth may be, as we have seen, purely objective and self-existent and yet a perfectly accessible and experienceable relation of identity between things that are believed and things that exist. And I submit that there is a certain naïveté in assuming (as I think the pragmatists do assume) that a demonstration of the greater futility of the absolutist conception of truth is an adequate proof of their pragmatic substitute for it.

The answer to our question, May a realist be a pragmatist of the "psychological" kind? must be an unqualified negative. The theory that identifies truth with those experiences of *successful leading* by means of which truth is sometimes verified appears to be false, and it is certainly anti-realistic, for it makes the *esse* of the truth relation consist in its *percipi*.

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DISCUSSION

DR. MONTAGUE AND THE PRAGMATIC NOTION OF VALUE

IN controversy, it is important to tell the truth, but it is still more important to confute the opponent. Sometimes, consequently, the opponent is in all innocence confuted at the expense of the truth; for the eagerness to make a point shuts out much, foreshortens much, and prevents a man from seeing anything but what he wishes. I am afraid that in Vol. VI., No. 9, of this JOURNAL, Dr. Montague, in his article on "The True, the Good, and the Beautiful from a Pragmatic Standpoint," has placed himself in this too common situation of the controversialist. So eager does he appear to have been to distinguish between "the true, the good, and the beautiful," that he has become blind altogether to a certain common character they happen to have, and appears to have missed the point that pragmatists identify truth and beauty as "mere forms of goodness" because of this common character, not because of any divergencies they may contain. That they contain divergencies no pragmatist has ever denied. What the pragmatist has denied is the notion that their excellence consists in those divergencies; what he has insisted on is the fact that their value is derived from a common function symbolized by the word "good," just as an oyster-shell, a steel blade, and a flat stone are "knives," through the exercise of the common function of cutting. But this thesis Dr. Montague has not considered at all.

To establish his contention he has manufactured a new statement of the "pragmatic standpoint." He calls it "the disposition to reinterpret the logical, ethical, and esthetic values of experience in the light of their relations to the life-processes of the organism." It sees "human experience as a series of efforts to bring about a harmonious adjustment or vital equilibrium between the private experience of the individual and the incomparably broader experience of an environing nature." This adjustment may be attained in three ways: "First, the (individual) element may undergo whatever alteration of its nature is demanded by the context, the context itself remaining unaltered; or second, the context may undergo whatever alteration is demanded by the element, the latter remaining unaltered; or third, the element and its context may each of them spontaneously, and without compulsion from one another, attain harmony or equilibrium." The first of these adjustments Dr. Montague identifies with truth, "for when we are testing the truth of a judgment it is essential to the success of the

process that we make the judgment accord with the environing facts." The second he identifies with "goodness," the satisfaction of desire; which occurs "when the environment conforms to or gratifies the conative demands of the individual." The third he identifies with beauty, which "simply happens" in the accord of the environment "with the organism or with any part of it, in such a way as to accelerate or facilitate its processes."

Now it might easily be urged against the positions here taken up that Dr. Montague is putting up a man of straw in order to knock him down. If he were really to confute the pragmatists, he must confute them out of their own mouths. There are pragmatic accounts of truth galore with which Dr. Montague's account is in no sense compatible; there are pragmatic accounts of goodness and beauty with which his are little more harmonious. Properly, it was his business to show that pragmatic accounts of truth are not consistent with such accounts of goodness and beauty. It was not sufficient merely to assert, in a historical account of the relation of Dr. Schiller to Mr. Bradley, that the "conative and the cognitive types of value are as distinct from one another as north and south, and to seek to identify them or to reduce either to a form of the other is sheer confusion." It was not sufficient; and it is still less sufficient to have admitted in the same paragraph that "no experience is so purely conative as not to have a cognitive aspect, and none is so purely cognitive as to be free from the element of conation" (p. 236). If Dr. Montague seriously meant to refute the pragmatic thesis that the true and the beautiful are "forms of the good," it was his proper task to show that the pragmatist's own proof of this relation was incompatible with its existence. It was his business to confute them out of their own mouths, not to manufacture his own version of what they mean.

But I am content to accept this version at its own face value and to show that the man of straw, in falling, must needs tumble on its author's head. It must do so because its author, in his eagerness to show the differences in values, failed to consider a certain other difference which the pragmatists have insisted on, and the discussion of which is as old as Plato. That difference is the difference between instrumental and final goods. As pragmatism has made much of the instrumental aspect of value, it may be well to consider a little, what, according to Dr. Montague's pragmatism, the instrumental good consists in. The business of life, "human experience," Dr. Montague tells us at the outset of his paper, "may be viewed as a series of efforts to bring about a harmonious adjustment, or vital equilibrium, between the private experience of the individual and the incomparably broader experience of an environing nature."

Such an adjustment or "vital equilibrium," if attained, would be a stopping point, uninstrumental, self-sufficient, intrinsically stable. It is the goal of effort, the poise of judgment, the condition of pleasure. Now clearly, if the "series of efforts" have any value, it is a value they derive from their success in establishing this adjustment. The excellence of an instrument, though Dr. Montague's discussion does not allow it, is determinable traditionally by its success in fulfilling its purpose. And this purpose, enunciated so unfalteringly by Dr. Montague—is it good or bad, desired or undesired? Dr. Montague does not say, he is too busy (having told us that human experience is a *series of efforts* to bring about a "vital equilibrium"), proving that some efforts differ from others. He forgets to observe that they are all *efforts,* and that they are united in a *common* purpose. He fails to note that this purpose, this "vital equilibrium" is, on his own rules, to be attained *conatively,* and that the *seat* of the process of alteration is not in issue—that what is in issue is the fact that the attainment of what he calls "truth" is a *process,* just as the attainment of what he calls "good" is a process. When either of these is attained, there occurs what he calls a "vital equilibrium," but he insists that there is nothing in common between these equilibria, simply because the ways of getting at them are different. Yet strangely enough, they *are* equilibria, they *are* "harmonious adjustments of organisms to environment." Under the circumstances one would be tempted to say that the intrinsic nature of goodness was identical with the "vital equilibrium" and that the "truth-process" and the "desire-process" and the "beauty-process" were instruments that bring it about. But for some occult reason Dr. Montague supposes that because the organism changes more than the environment, the equilibrium at the end of the change is different from that attained when the environment changes more than the organism. Similarly it may be argued that if Dr. Montague travels to Boston by way of New Haven, and I travel to Boston over the Harvard Bridge, and Dr. Schiller is translated to Boston on a magic carpet, just "happens" in Boston, that we have arrived at different cities. The way through New Haven is the way through New Haven, and the way over Harvard Bridge is no doubt the way over Harvard Bridge, and the carpet is the carpet, but they are all *good* only as *ways to* Boston, and the purpose in hand, being-in-Boston, is good-in-itself. It is a "vital equilibrium." The instrumental value of things is definable only by their efficiency in realizing their purpose; their goodness is derived from that purpose, itself an excellence, intrinsic, immediate, simple. If truth and goodness and beauty are processes only, purposing a vital equilibrium, they are "good" in so far as

they reach it; and each is *good in the same way* as the others; if they *are* the "vital equilibrium," it is incumbent on Dr. Montague to show that this differs *intrinsically* for each form of value. But he can not do this—for *qua* "vital equilibrium" truth and beauty and goodness are identical.

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REVIEWS AND ABSTRACTS OF LITERATURE

Principii di scienza etica. F. DE SARLO & G. CALÒ. Palermo: Sandron (no date). Pp. 316.

La patologia mentale in rapport all' etica e al diritto. By the same authors. Palermo: Sandron. Pp. 194.

It is certainly not easy to unite the idea of ethics as a science, which implies the principle of causation, and the idea of the indetermination of the will. And the difficulty can be excluded only by giving to the word "science" an extended meaning. The authors describe science as "the orderly and systematic knowledge of a given order of facts, of their laws and of the ultimate principles of these laws" (p. 1). The object of ethical science is the moral experience; and this consists in the fact, which can be immediately experienced, of the consciousness of every individual of civil society in the present degree of civilization that certain actions are considered as deserving to be done, or as obligatory, and certain others as unworthy, or contrary to duty (p. 5). The moral consciousness is clearly distinguished from the social consciousness, because this last does not necessarily imply the sentiment of the intrinsic value of a certain form of conduct; and it differs also from the juridical, political, religious, and esthetic consciousness. Consequently, ethics is an independent science, independent also of metaphysics. There is a metaphysics of morals, but no metaphysical ethics (p. 28). Ethics is founded on an immediate, evident certainty, while metaphysics, which is a rational reconstruction of the world, can not pretend to this evidence and immediate certainty. The latter has to do with *what is,* while the first has for its object *what ought to be.* The judgments of the one are what the Germans call *Existentialurtheile,* those of the other, *Werthurtheile.* Ethics is not a merely descriptive, but an essentially normative science (p. 29). The special question of the normative character of ethics is an aspect of the general question of the nature of the highest functions of the mind. In a certain sense, it can be said that the mind is in itself normative as knowing, as creating, as willing: in theoretical, in esthetical, in practical activity, it has the idea of an end to which it ascribes a value in itself, which it considers as normal and suiting to its nature, and which consequently reveals itself under the form of norms. But it must be considered that norms exist only in reference to certain ends, and ends exist only, in the mind, in reference to the will (p. 34). So that only moral laws are truly normative.

In our inquiry after those absolute values—those ultimate ends, which

do not admit of any causal explanation, and are the logical *prius* of every other valuation—we must follow two methods: the psychological, and the historical. The psychological analysis shows that in the experience of value, which characterizes the moral consciousness, we have a synthesis of knowledge, feeling, and will (pp. 76–9). Rationalism in its various forms (metaphysical or theological rationalism, naturalistic and utilitarian, or idealistic rationalism), voluntarism, and sentimentalism (the theory of sympathy, and the Scotch intuitionalism), are one-sided and insufficient explanations of the moral consciousness. The fact of valuation is the highest and most complicated fact of conscious activity, and implies the cooperation of all the fundamental functions of mind. The moral experience is something quite original and not reducible to anything else: it is a spontaneous reaction of our consciousness in presence of certain objects which appear to us as valuable or the contrary. What distinguishes the judgment of valuation in general from the theoretical judgment, is the fact that in the last subject and predicate are two objects of thought independent of any subjective action; and what characterizes especially the ethical judgment is the consciousness of our freedom to realize or not the moral values (p. 83). A peculiar character of the moral consciousness is that the valuing capacity itself can become an object of moral valuation and that it is capable of perceiving the differences of value—differences which are *qualitatively* distinct from the apprehension of the particular values.

In the moral consciousness we can distinguish a *contemplative* and an *active* element, and we pass from the one to the other by means of the feeling of obligation, in which it is impossible to say if it is the consciousness of the intrinsic value of the object which prevails, or the consciousness of our free will. For what is ethically approved is also at the same time apprehended as a more or less urgent obligation for our will (p. 111). As to the sense of responsibility, it is originally a manifestation of the pressure which the collective consciousness exercises on the individual consciousness; but as soon as the individual recognizes that the social sanctions have no intrinsic value, he becomes the judge of his own actions and feels responsible before his own conscience (p. 118). Free will, as the capacity of free choice, of *unmotived* adhesion to one of the motives proposed to our mind, is a necessary postulate of our ethical consciousness. By this *unmotived* choice the authors mean that there must be a moment in which the cause determining the will to choose a motive rather than the other can be found only in the power of initiative of the will itself (p. 130).

This sounds very much like the *arbitrium indifferentiæ* of the schoolmen, and like the ancient doctrine of the separate faculties of the soul, and does not seem quite consistent with what the authors themselves say about psychical and moral experience, which they consider as a synthesis of reason, feeling, and will, and with the idea of the *ego* as a spiritual substance, as an original principle of activity (p. 137). A substance must be something determinate; an activity must tend to certain ends. An absolutely indeterminate activity means simply chance. An uncaused volition, a capacity of acting without a motive, is inconceivable, and if it

existed, would be destructive of morality, which implies the idea of certain ends. No doubt we are conscious of being free, but freedom consists in the power of reflecting before acting, of conceiving and choosing between different ends of conduct. Not determinism, but indeterminism, excludes freedom. The question is not if our actions are caused or uncaused; the question is, what is the nature of the causes which determine them? If amongst these causes there is my reason, my consciousness of myself as conceiving ends and trying to realize them, I am free.

The history of morality—which occupies the second part of the work, and is mostly a résumé of the able work by Professor Westermark on "The Origin and Development of Moral Ideas"—can be described as the history of the gradual assertion of human freedom, of the realization of man's moral nature. The authors treat successively of moral evolution in respect of the valuation of the intrinsic qualities of the human personality (intelligence, culture, courage, force, temperance, etc.), of justice, of benevolence; and they consider this historical treatment as verifying the psychological analysis, for it shows, in their opinion, the universality and necessity of the fundamental ethical principles. But even if it could be shown that in the course of civilization some valuations are constant and unchangeable, one does not see the use of such an inquiry, which ought to be included in the field of sociology rather than of ethics. If the principles of conduct are, as the authors pretend, evident in themselves, history is useless.

On the contrary, historical inquiry shows the erroneous side of the authors' point of view. It shows that ethics is not, as is commonly supposed, a so-called normative science, nor a science of *Werthurtheile.* The facts and laws of moral life are the object of a theoretical science, like every other. All theoretical sciences have applied sciences corresponding to them, and so also there is a theoretical and an applied science of ethics. But before establishing the norms, it is necessary to establish the ends of conduct. Before studying what ought to be, one must study what is. Nor is the judgment of valuation a distinctive character of moral science. Everything in the world can be made an object of valuation. And every *Werthurtheil* implies an *Existentialurtheil,* that is to say, the existence of an object to which we ascribe a value. Before approving an act of justice or of charity, or condemning an act of injustice or of inhumanity, we must know what is justice and charity, injustice and inhumanity, precisely in the same way that to appreciate a piece of sugar or avoid a poison, we must know that the one is good for our organism and the other dangerous. The only difference is in the degree of importance.

The little work on "Mental Pathology in Relation to Ethics and Law" is an attempt to determine the normality of conduct and the ideas of imputability and responsibility. There are three kinds of finality and normality: physiological, psychological, and ethical. Normality of conduct implies the existence of a will and an end, and some knowledge of reality, and of the means of realizing the end, and implies also a certain coordination and subordination of the ends, consequently a regular organization of psychical life and of the actions by which the will manifests

itself, a continuity, a coherence (pp. 4–5). So it is possible to distinguish between those forms of delinquency and immorality, which depend on the various forms of abnormality and degeneration, and those forms which have an extra-pathological origin; *i. e.,* depend on free will. Determinism (evolutional, psychological, sociological) is destructive of responsibilty; it confuses pathological abnormality with ethico-juridical abnormality. It would be useless to discuss these theories, which are those of the old spiritualistic school and of the classical school of penal law. The fact is that not determinism, but indeterminism, is destructive of responsibility. How could a man be made responsible for an unmotived action? Nor is the idea of punishment at all irreconcilable with determinism. Do not we punish children, although not even the authors would pretend that they are responsible? In a certain sense, freedom is a necessary presupposition of morality, responsibility, and punishment. Freedom is the clear consciousness of one's own acts and of their consequences, and the power of understanding the justice of punishment and of feeling its effects. Punishment is justified in so far as it appears not only as a necessary social reaction against the doings of the criminal, but also as a means of educating him, of making of him a better man, of producing in him the consciousness of true freedom. For, doubtless, only the moral and honest man is truly free.

In this last work one finds here and there mistakes which appear the more strange as one of the authors has begun his career as a doctor. *E. g.,* at page 57, it is asserted that hysteria and epilepsy are among the *factors* productive of degeneration. It would seem rather that they are the *results* of a degeneration of the organism, or the form of the degeneration itself. At page 44 neurasthenia is considered as the common germ, from which originate all mental illnesses. But are there not diseases of the brain having a traumatic origin, and other causes independent of any degeneration of the nervous system? And must all people with hysterical, neurasthenic, and hypochondriac symptoms, be shut up, as the authors advise (p. 63), in lunatic asylums! Indeed, it seems absurd to consider that nervous sensibility, which is often the only cause of those symptoms, and can not be said to present any real pathological character, as implying a fatal, irremediable, constitutional degeneration.

One last remark. The authors criticize the idea of a semi-responsibility, which they consider as a juridical monstrosity (p. 152). Such an idea is certainly a monstrosity in their indeterministic theory of the will. Between free will in the traditional sense and no will at all there is no mid-way. But it is quite justifiable in a deterministic theory. A semi-responsible person is a person who, although subject to pathological impulses, is susceptible to moral education and strengthening of the will, and to the effects of punishment. Such a person can not be left exempt from punishment, like a completely irresponsible criminal, who has no consciousness of his doings and no power to control his impulses; and, in justice, can not be so severely punished as a completely responsible person who, acting in the full power of his intelligence, and with the clear insight of his motives and his objects, and after mature deliberation, shows a

much greater perversion of the will and badness of character than a neuropathic individual who for a moment loses control of himself and commits a crime. As there are various degrees of freedom, so there must be various degrees of responsibility; in the same way that there are different and more or less severe punishments attaching to different and more or less grievous offences.

All this remains unintelligible in the indeterministic doctrine of pure free will.

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René Descartes. Eine Einführung in seine Werke. K. JUNGMANN. Leipzig: Fritz Eckardt Verlag. 1908. Pp. viii + 234.

We have here a careful and painstaking account of the philosophy of Descartes, written with German thoroughness and based not only upon his philosophical works, but also upon the recent edition of his letters. The exposition is clear, the criticism sound, and both together make the book a valuable addition to the long list of commentaries upon Descartes and his school. The principal objection to be brought against it is rather of a literary than of a philosophical nature. The style is heavy and the reading may easily become a task. However much students of Descartes may feel repaid for the time devoted to the book, it is not likely to attract those not already interested in the subject. Perhaps the charm of a clear and simple style is too much to ask of a writer upon philosophy; certainly it is more than one usually gets from him, and Herr Jungmann is no more careless than many of his fellows.

The arrangement of the book is based both upon chronology and subject-matter, a combination always to be desired and, in the case of Descartes, particularly successful. A chapter upon method is followed by others upon mathematics, epistemology, and the sciences, under which captions are placed metaphysics, physics, psycho-physics, ethics, and religion. The account of Descartes's achievements in mathematics is excellent. Their nature, their value, and their relation to the rest of the mathematical thought of that century are all admirably set forth, while, at the same time, it is constantly urged that at bottom Descartes was never a mathematician. He was not interested in mathematical truths as such, but occupied himself with them because of their relation to philosophy. This is undoubtedly true to a large extent, though it seems to me one is hardly justified in saying that at no time in his development did Descartes have an interest in mathematics for its own sake. Such an interest was doubtless temporary and was promptly subordinated to others which were more permanent, but for a brief period it seems to have really existed.

The chapter upon epistemology occupies by far the larger portion of the book and contains many of the most distinctively cartesian doctrines. These are treated with considerable detail, but without much attempt to evaluate them. In opposition to various other students, the author regards Descartes's position as critical rather than as dogmatic, because

he begins with an unprejudiced examination of the knowing faculty, and having once reached definite results, he does not attempt to transgress the limits thus established. In like manner his idealism is pronounced to be of the empirical type, because he regards knowledge of the external world as impossible except as the result of the direct action of outer objects. All this elaborate structure of epistemological theory, however, can not be regarded as an end in itself. Like mathematics it was of value in the eyes of Descartes only because of its relation to physics, which is the aim and center of his philosophy. For him epistemology was a propædeutic to physical philosophy, and he cared for no other metaphysics.

The basal conceptions of the cartesian physics are the vortex and the ether. From these two principles the whole material universe, both inorganic and organic, can be explained. The details of the explanation are naturally more fully worked out in some directions than in others, and Herr Jungmann follows Descartes in this respect. The book is brought to an end by a chapter upon Descartes's writings, which are divided into three groups: the published works, the fragments, and the letters. The last are of especial value in tracing the development of Descartes's thought and the relation of his books to one another. The letters make it possible to state with accuracy the order in which many of Descartes's theories took shape in his own mind, and, in some cases, show that the previous conjectures upon this subject are altogether wrong. In fact not only here, but throughout the book, Herr Jungmann pays a good deal of attention to fixing exact dates in connection with his author's philosophical activity. The care with which this work has been done, united with equal caution in the formation of conjectures where sufficient evidence is lacking, will undoubtedly make the monograph of value for reference to any student of philosophy desiring exact information concerning the origin of the Cartesian theories.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. September, 1909. *L'explication scientifique et la causalité* (pp. 225–254): Kozlowski. – The idea of causation as irreversible dependence is indispensable and results from the architectonic need that compels our understanding to reconstruct reality in accordance with the demands of logic. *L'esthétique scientifique* (pp. 255–267): Ch. Lalo. – The introduction to *Les sentiments esthétiques* which is about to appear. *Des vicissitudes de la lutte pour la vie* (pp. 268–275): Georgesco. – Man is a simple spectator of the drama resulting from the unalterable essence of the living principle. *Notes et discussions. Religion et mysticisme, d'après l'observation psycho-pathologique:* Duprat. *Il n'y a pas de logique formelle:* Hourticq. *Analyses et comptes rendus.* Berquer, *La notion de valeur:* J. Segond. C. Piat, *Insuffisance des philosophies de l'intuition:* M. Solovine. Ewald, *Kants kritischer Idealismus:* J. Segond. Gaultier, *L'idéal moderne:* J. Segond.

Marinsary Leblond, *L'idéal du XIX^e siècle:* Ossip-Lourie. Spiller, *Papers on Moral Education:* J. Segond. Elsee, *Neoplatonism in relation to Christian Philosophy:* C. Huit. P. Barth, *Die Stoa:* C. Huit. Bové, *Sistema cientifico Luliano:* F. Picavet. Bonilla y San Martin, *Historia de la filosofia española hasta el siglo* XII: J. Pérès. Lacombe, *Taine, historien et sociologue:* L. Arréat. Rudler, *La jeunesse de B. constant:* L. Dugas. Lederbogen, *F. Schlegels Geschichtsphilosophie:* J. Segond. Spranger, *W. von Humboldt und die Humanitatsidee:* J. Wolf. Bants, *Gesamelte Schriften:* J. Segond. Kühn, *Kants Prolegomena in sprachlicher Bearbeitung:* J. Segond. *Revue des périodiques étrangers.*

REVUE DE METAPHYSIQUE ET DE MORALE. July, 1909. *La logique de l'infini* (pp. 461–482): H. Poincaré. – The paradoxes of the transfinite can be avoided by a psychologically correct method. We should (1) consider only objects definable by a finite number of words, (2) make all propositions concerning the infinite traductions from propositions about the finite, (3) avoid classifications and non-predicative definitions. *Les sources néocriticistes de la dialectique synthétique* (pp. 483–500): L. Dauriac. – A discussion of the relations between the philosophies of O. Hamelin and Renouvier. *Correspondance inédite de Ch. Renouvier et de Ch. Secrétan (suite)* (pp. 501–551). – A continuation of the personal and philosophic correspondence which has appeared in previous numbers of this journal. *Études critiques. Identité et réalité, par E. Meyerson:* A. Rey. *Discussions: A propos d'Auguste Sabatier. Reponse de M. G. Sorel:* H. Monnier. *Questions pratiques. La démocratie et la loi d'après deux ouvrages récents:* G. Aillet. *Supplément.*

Jacoby, Gunther. *Der Pragmatismus: Neue Bahnen in der Wissenschaftslehre des Auslands.* Leipzig: Dürr'schen Buchhandlung. 1909. 1M: 20 Pf.

Jones, Adam Leroy. *Logic Inductive and Deductive: An Introduction to Scientific Method.* New York: Henry Holt & Co. 1909. Pp. vi + 304. $1.00.

Rhodes, D. P. *The Philosophy of Change.* New York: The Macmillan Co. 1909. Pp. xxv + 389. $2.00 *net.*

Strong, Anna Louise. *The Psychology of Prayer.* Chicago: The University of Chicago Press. 1909. Pp. 122. $0.83.

NOTES AND NEWS

In the *New York Medical Journal* for September 11 there is an interesting account of the new Henry Phipps Psychiatric Ward at Johns Hopkins. We quote the introductory statement of the article: "It is a far cry from the stone-walled dungeons, the manacles and the whips, the repugnant food, and the generally misguided and cruel treatment of the lunatic a century ago to the psychiatric ward about to be added to the Johns Hopkins Hospital, Baltimore, through a munificent endowment by Mr. Henry Phipps. Through the courtesy of Mr. George Atterbury, the

architect charged with the preparation of the plans, we are enabled to present the plans of three of the floors, with a description of the more important features of the building." This description is comprehensive and includes an account of the portions of the building devoted to the several interests that are gathered under the one roof. To quote from the article: "The general functions of the building comprise research, educational and clinical departments, and an out-patient department, and these are kept distinct. The clinical department is divided for general and private patients; the entire top floor, separated into suites of varying sizes, is devoted to the latter."

In *La revue du mois* for August, M. Georges Bohn contributes an article on "L'éxperience en biologie et en psychologie comparée." In the main it is a sketch of the leading ideas contributed to the development of biological science by Cuvier, Bernard, and Giard. It concludes with the citation of a number of experiments which tend to show that instincts are not fixed, but variable, and that the variation depends on the "physiological states" of the organism. The production of these states under artificial conditions appears to be attended by characteristic instinctive reactions, and these appear to be independent of the normal instinctive reactions of the organisms concerned. For instance, males exhibit the characteristic reactions of females, and females of males. M. Bohn urges that the use of the experimental methods of physiology should be the important concern of students of comparative psychology, especially in the study of instinct.

At the recent second decennial celebration of the opening of Clark University honorary degrees were conferred upon the following persons: the degree of Doctor of Laws upon Percival Lowell, of Boston, Dr. Ernest Fox Nichols, president of Dartmouth College, Professor Franz Boas of Columbia University, Dr. Adolf Meyer of Johns Hopkins University, and Professor L. William Stern of the University of Breslau; the degree of Doctor of Physics upon Professor Albert Abraham Michelson of the University of Chicago, and Professor Ernest Rutherford of the University of Manchester, England; the degree of Doctor of Letters upon Professor Edward B. Titchener of Cornell University.

We quote from the *Athenæum* the following note: "Professor W. J. Ashley is preparing for Messrs. Longmans a student's edition of John Stuart Mill's "Principles of Political Economy." He will indicate, with their dates, all the changes in the text which show any variation or development in Mill's opinions. There will be an introduction, setting forth the position of Mill in the movement of economic thought; and an appendix will give references to subsequent writers."

The Open Court Publishing Company has in press Arthur Collier's "Clavis Universalis," edited with Introduction and Notes by Ethel Bowman, M.A., Wellesley College. The book was published in the same year —1713—as Berkeley's "Dialogues between Hylas and Philonous," and is a careful and spirited argument for an idealistic conception of the universe. Curiously enough, Berkeley and Collier seem to have been entirely uninfluenced, the one by the other.

FRANCIS GALTON has recently prepared a volume of reminiscences entitled "Memoirs of My Life." On the last birthday of King Edward the degree of knighthood was conferred upon the great scholar in recognition of his long service to science. Sir Francis Galton is one of the small group of living men who still represent the Victorian era. The group includes also Hooker, Wallace, Avebury, Lister, and Huggins.

DR. ARNOLD RUGER, who has charge of the annual bibliography of philosophical publications, instituted by the Fourth International Congress of Philosophy last September, will be glad to receive copies of papers bearing on philosophy, psychology, logic, ethics, and esthetics. These papers should be sent in care of the Weiss'che Universitäts-Buchhandlung, Heidelberg, Germany.

PROFESSOR ERDMAN, of the University of Bonn, will take the place at the University of Berlin of the late Professor Paulsen. Professor Erdmann's position at Bonn will be filled by Professor A. Külpe, of the University of Würzburg. Professor Külpe will institute at Bonn a laboratory of experimental psychology modelled on the laboratory at Würzburg.

A BIBLIOGRAPHY of philosophy and pedagogy has been organized under the editorship of A. F. Formiggini at Modène. It contains among the discussions of *Questione filosofiche* papers by D. Calò and by Vailati; and (in preparation) "Il materialismo dialettico e il materialismo storico di Federico Engels," by Rudolfo Mondolfo.

THE volume entitled "Allgemeine Geschichte der Philosophie" in the collection "Die Kultur der Gegenwart" contains the following essays of interest: "Die Anfänge der Philosophie und die Philosophie der primitiven Völker," by William Wundt, and "Die neuere Philosophie," by William Windelband.

ON the occasion of the recent Leipzig celebration Dr. Wilhelm Wundt, the eminent psychologist, who made the principal address, was given the title of excellency. He was also made an honorary citizen of the city of Leipzig.

DR. IRVING KING, who has for the past two years held the position of assistant professor in education at the University of Michigan, has been appointed assistant professor in education at the State University of Iowa.

PROFESSOR J. MARK BALDWIN has been made Docteur en Science, causa honoris, of the University of Geneva.

PROFESSOR G. H. HOWISON has been made professor emeritus of philosophy at the University of California.

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MAY A REALIST BE A PRAGMATIST?

IV. The Implications of Humanism and of the Pragmatic Criterion[1]

Ontological Pragmatism or Humanism.—From the days of Xenophanes we have been reminded by philosophers of the fact that each individual is compelled to view the world and to interpret it from the point of view of his own species. The world known by the lion and the gods that he would worship if he worshipped at all, differ from the world and the gods recognized by humanity. Bacon's description of the "idol of the tribe" is perhaps the most incisive formulation of this limitation from which we suffer. As human beings we are condemned to know not the world as it is in itself, but only those aspects of the world which may be glimpsed through the imperfect media of our human faculties. The other idols—the personal equation, and the undue influences of tradition, and public opinion—may, in large measure, be discounted or even removed. They are but slight handicaps to knowledge, as compared with the ineradicable racial limitation of outlook. Now, at first sight, the theory of humanism appears to be nothing but a very emphatic and extended disquisition on the idol of the tribe; but a further examination of the doctrine reveals a curious note of optimism which is usually quite absent from the treatments of this topic. We seem to detect the humanistic pragmatist in the act of bowing down to the idol and rejoicing in its presence instead of endeavoring, however, fruitlessly, to cast it out. The ordinary man of philosophic turn can never watch a dog nosing joyously in a heap of refuse without feelings of regret and shame that his human organs of sense preclude him from perceiving any but the unlovely aspects of that refuse. But the humanist seems positively to delight in the narrowness of human vision, and in the limited and anthropomorphic character of human knowledge. And when we seek the reason for this strangely optimistic attitude we find traces of a far stranger assumption, the assumption, namely,

[1] For the three preceding papers of this series, see this JOURNAL, Vol. VI., pp. 460–463, 485–490, and 543–549.

that the world reflected in the mirror of human faculties is *the* world, the real world in which we live. Of course this assumption would not be strange at all in a naïve realist, or in one who regarded the human mind as a clear and adequate rather than a distorting and limited mirror of existence. What makes it strange in the case of the humanist is that in one breath he descants in the spirit of Bacon and the ancient sceptics on the power of the human mind to overlay reality with humanistic qualities, and in the next he praises the humanized objects thus created as constituting the real world. But because this doctrine is strange I would not imply that therefore it is self-contradictory, or even false. Perhaps it *is* possible to regard the world known by us as being in large measure determined by our human cognitive reactions and as being, at the same time, the real world in which we live.

Indeed, the relation of humanism to the doctrine of the idol of the tribe is rather strikingly analogous to the relation between the theories of Kant and of Hume. Hume demonstrated to his own satisfaction the subjective origin of that law of cause and effect on which all natural science was based. It seemed clear to him that a subjectively grounded science could not apply with any certainty to an objective world—hence his scepticism. But Kant accepting, with certain differences of detail, Hume's conclusion as to the subjectivity of causality and the other categories, took an optimistic attitude and declared that just because the laws of science were man-made they were for that very reason applicable to nature. The cure for the sceptical ills of subjectivism was more subjectivism. Not only causality, but also the *spatial and temporal order,* in which nature's facts are presented, is subjective. As the laws of nature and the laws of knowledge have, therefore, a common root in human reason, there must of necessity be perfect harmony between them. Out of the very ashes of Humian scepticism arose the phœnix of Kantian rationalism, with its new foundations for science, morals, and religion.

But to return. By humanism I understand the conjoined theories: (1) That what world we shall know is determined largely by our specifically human faculties, and that these cognitive faculties and functions are in turn determined by our emotions, desires, and needs. (2) That the world that we come to know in this way is the real world itself, and not in any sense a distorted image of it. Our question is: Are the implications of this most novel doctrine realistic or not? My answer is that they may be either, according as they are interpreted. The more natural, and actually the more frequent, interpretation is, I think, definitely subjectivistic. But I shall en-

deavor to show that there is a second and less obvious interpretation which is quite compatible with realism.

Now, first for the subjective interpretation: Human knowledge, whether consisting of explicitly formulated judgments, or of those more primitive and inchoate judgments called perceptions, sensations, and feelings, is always a reaction of the organism to its environment. Every reaction affects the thing reacted upon, and is in its own nature partly determined by that which reacts. The human being reacts in accordance with its needs and desires, hence the environment of human beings, in so far as it is a subject of the cognitive reaction, has been humanized. Through generation after generation men have reacted cognitively to nature and thus nature, or at least the nature that we know, has been moulded and adapted to human needs. This implies that nature is *plastic*. As a lump of clay conforms itself to the sculptor so nature conforms herself to our categories, which are nothing but typical forms of reaction. This does not mean that any one is free to think what he likes about nature. Any new thought about nature, any new cognitive reaction, has to overcome the momentum, as it were, of the entire mass of reactions contributed by the race during past time. But, despite this acquired structure, the world is and always will be plastic; to what extent it retains its plasticity, we can learn only by experiment. To the question as to whether the humanist believes that the nature that we know was ever wholly without form and void, and whether all her characters are acquired and none of them innate, I can find no clear answer. It seems to be a methodological maxim of humanism to try to trace back, so far as that is possible, any seemingly stubborn and innate character of the world to the ancient and deep-lying reactions of the race. Even space and time may be regarded as very primitive human reactions which were so tremendously useful to man that they were preserved and handed down as integral parts of his cognitive apparatus, so that now he fails to recognize his own handiwork, and tends to regard them as the eternal and intrinsic properties of nature herself. This way of interpreting humanism assures to us, moreover, a harmony of the good and the true. For the cognitive reactions by which we confer upon nature her forms and characters are governed by our needs and desires, hence reality must be pretty much what the race has wished it to be. When we find bad parts of reality we must, I suppose, explain their badness as due to the fact that even a plastic nature can not be all things to all men, and our present desires are sometimes out of tune with those of our ancestors who got ahead of us in moulding nature.

There are two points in this type of humanism that are obscure to me. Would the humanist treat the specific facts of the world, such

as air and water, or such as stars and comets, in the same way as he treats its general forms of space, time, and number? Are they, too, to be regarded as human inventions, or may they be attributed to nature in her own right, as exceptions, so to speak, to her generally plastic character? And such things as death, pain, and failure—are they nature's own contributions to our world, or are they perhaps the harvest of some ancestral sowing of wild oats, the outgrowths of primitive needs which have been somehow preserved—presumably on account of their utility? A second point that humanism leaves obscure is its relation to bovinism, caninism, and equinism. Are they precluded or implied? Are the forms of the world in which we live the product only of our race or are they also the product of all races? And if the latter, then how are we to think of the relations between these different forms? Is there one nature which is the resultant of all the racial types of cognitive reactions, or are there as many natures as there are types of life? Does, for example, the dog's cognition of the world have any direct effect upon the cognitive forms with which we clothe the world, or are the different sets of categories neutral and transparent with respect to one another?

I have tried to formulate the subjectivistic interpretation of humanism in good faith, and to avoid caricature. The doctrine, as so interpreted, seems to me extremely picturesque and utterly false —I hesitate to call it absurd, only because it reminds one so strongly of Kantianism. The plastic reality of the subjective humanist and the Kantian thing-in-itself exhibit the same complacent submission to the infliction upon their own spaceless and timeless natures of space, time, and other forms of human cognition. How, in either case, it is possible, not to mention useful, to know reality as it is not, is difficult to understand. There is one important point, however, in favor of the Kantian over the humanistic view. Kant postulates a transcendental ego as the legislator for nature, while the humanist attributes creative cognition to the natural ego. As we know nothing about what a transcendental ego could do, it seems innocent enough, though somewhat gratuitous, to assume that it can create a world of time and space. But we do know something about our natural egoes, our concrete empirical selves, and to assume that they have in the course of evolution imposed upon nature the very categories which define that evolution—to assume that at a certain time and in a certain place psychophysical organisms did by means of their cognitive reactions create or invent the time and space in which those reactions occurred—to make such assumptions does seem to lead to a perfect seething stew of contradiction and confusion.

But let us turn to the more congenial task of formulating the second or non-subjective interpretation of humanism. We can ar-

rive at this second interpretation most easily by making two simple substitutions in the doctrine we have been criticizing. For the conception of objective nature as formless and plastic substitute the conception of *multiform variety.* And for the conception of cognition as creative or transformative substitute the conception of cognition as *selective.* We shall then get a theory not nearly so novel or picturesque as the other, but one that is sufficiently impressive and quite free from paradox. Let us begin with an illustration. Imagine a number of harps, the strings in each harp being of different lengths from those of the others. Imagine these harps to be set vibrating in response to a disturbance in the air. Compare the harps to living beings of different species, and the air that sets them to vibrating to the world that calls forth our cognitive responses. Now, if you think of the disturbance that causes the harps to vibrate characteristically as being itself toneless, lacking in vibrations of any specific length, then the illustration will apply to the first interpretation of humanism. But if you think of the air as containing all sorts of vibrations, from which each harp selects for sympathetic response the particular set corresponding to its own strings, then the illustration will apply to the second interpretation of humanism. Let us think of nature, not as poor and formless, with the plasticity of soft clay or of a painter's empty canvas, but rather as a being of infinite variety. Of the multitude of energies which are continuously impinging on sentient organisms, each organism can select for specific cognitive response only those few which its own set of organs are attuned to transmit; and from these our perceptual attention again selects those that are adapted to the needs of the moment; and from these again our reflective attention selects those which seem of most value for our rational, or permanent, interests; and, finally, from these last human society collectively selects from each individual mind the best, and with them constitutes human traditions, customs, and science. Not creation, but selection, is the essential feature in all these stages in the evolution of knowledge. The world that we know is a man-made world only if by *man-made* we mean *man-selected.* The selection is, moreover, profoundly and continuously modified by our needs, desires, and aspirations. There are other types of relation between objects than the space relation, and it is conceivable that there was a time when our ancestors had not found it either possible or expedient to cognize their world under the form of space. Space might in such a situation have been "invented," if by that we mean no more than "discovered."

There are two further points to which I would call attention before concluding the examination of humanism: First, the

denial of the plasticity of nature with respect to our cognitive responses does not in the least imply that it is not plastic and alterable with respect to our voluntary activity. Nature may be as dynamic, as changeable, even as indeterministic, as you please and yet perfectly unaffected by our mere acts of cognition. Soft clay is plastic and changeable enough, but it is not changed by our looking at it, by our mere appreciation of its presence, any more than if it was a piece of adamant or an eternal verity. If we want to change the clay we have got to handle it. And if we want to change our environment we have got to perform work upon it. The human race, like all other races, has made very considerable alterations in its physical environment, and these alterations have been guided by knowledge. But knowledge has never been directly effective but only indirectly, as a means by which the work of alteration could be effectively carried on. And the second point which I would make is to anticipate a certain criticism. It may be said that the distinction between the first and second types of humanism is a verbal and barren one, a typical intellectualistic distinction that makes no practical difference. I have chosen to ridicule the notion that cognition confers forms upon a plastic nature, and have praised the notion that cognition selects from the many preexisting aspects of nature those which it needs. The only difference, it may be said, between the two notions is that one formulation happens to excite unpleasant feelings in the present writer and the other pleasant feelings. Thus might run the criticism. The only way I could answer it properly would be to refer the reader again to the two formulations and leave him to judge whether the distinction between them is empty or real. But without going over the whole matter, let me call the attention of my hypothetical critic to the following: What I know of the nature of my ancestors depends upon the information that I receive about them. My conception of them changes and grows as my information changes and grows. Isn't this just plain sense? Now suppose I say that my dead and gone ancestors depend upon the information that I receive about them and that they change and grow as my information changes and grows. Isn't *this* just plain nonsense? And isn't the distinction between the sensible and the nonsensical statement a real and not merely a verbal distinction? Cognition is pointing. The sensations that nature gives us are the pointers or the indicators through which we know nature. The kind of pointers we get from nature will determine which of the qualities of nature we shall perceive. And these pointers, or sensations, will in their turn be selectively determined by the kind of sense-organs and brain which we have. The impressions that nature gives to the horse will point to or

reveal to him the equinistic characters of the world. The impressions that man receives will indicate or reveal the humanistic aspects of the world. The responses of the equine and the human nervous apparatus will respectively constitute the *ratio cognoscendi* of the world perceived by the horse and the world perceived by the man. To interpret this as meaning that the horse or the man is a creator of the forms and qualities which he perceives in nature is to confound *ratio cognoscendi* with *ratio essendi.* And just as when criticizing the psychological pragmatist we saw that he would in all probability never have been tempted to identify the truth relation with the experience by which it is verified if he had kept clear the distinction between the cause of knowing a thing to exist and the cause of the thing's existence, so here we may say that the subjective humanist, or the humanist who should pooh-pooh the distinction between the two interpretations of his doctrine, would be guilty of the stock fallacy of the idealists, whose main basis for identifying *esse* and *percipi* is their identification of *ratio essendi* and *ratio cognoscendi.* It sounds very fine and impressive to inveigh (in the abstract) against the "abstractness" and futility of distinguishing conation from cognition and the cognitive response from the object cognized. It is only when you take the trouble to think the thing *through,* to apply it to concrete cases, to test it pragmatically by the test of consequences, that you discover that to recognize the above distinctions leads to sense, and that to overlook them leads elsewhere.

The answer to our question, May a realist be a pragmatist of the ontological or humanistic brand? is a qualified affirmative. We defined humanism as the doctrine that (1) what world we shall know is determined largely by our specifically human faculties, and (2) the world that we come to know in this way is the real world and not a distorted image of it. We have tried to show that if we interpret humanism to mean that cognition is creative and that the reality cognized is plastic or amorphous with respect to cognition, then humanism is incompatible with realism and is false in its own right; while if we interpret it (as we have a right to do) as meaning that cognition is selective, and that reality has a rich variety of aspects from which we choose for recognition and elaboration those which best meet our human needs, then humanism as so interpreted implies realism, and is true in its own right.

Logical Pragmatism.—We come at last to that fourth form of the pragmatic doctrine to which all three of the leaders of pragmatism may perhaps be said to subscribe equally. The defender of instrumentalism, the defender of the conception of truth as the immediate experience of verification, and the defender of humanism, appear to

be united in the belief that pragmatism does at least offer a new and fruitful method of testing the truth of propositions. "The truth of a proposition depends upon the value of its consequences."

Let us begin by noting briefly the apparent ambiguities of this statement, ambiguities which have, I think, been convincingly and exhaustively analyzed by Professor Lovejoy in his article on *The Thirteen Pragmatisms* (see this JOURNAL, Vol. V., pp. 5–12; 29–39): Are the "consequences," whose value is to be the test of truth, consequences of the thing asserted in the proposition, or consequences of holding the proposition? I think it is the latter which is usually meant. Are the consequences that test a proposition to have value for society generally or only for the individuals who may hold the proposition? I suppose the pragmatist would answer: sometimes one, sometimes the other, preferably both. The more the benefits and the more the people benefited, the more likely the truth of the proposition. Are we to mean by "value" theoretical value for further knowledge, or practical value for conduct? and if the latter, then are the beliefs which satisfy our higher emotional nature and help us to live serenely and happily, to be adjudged as true, or only those beliefs which preserve our physical existence and make more efficient our reactions to our environment?

I fancy that the pragmatist receives such questions with a certain impatience. He might reply that he meant by value each and all of the things mentioned and that we had no business to try to pin him down to a choice. What satisfies our cognitive needs would, of necessity, sooner or later satisfy our practical needs. And just in so far as a belief meets a practical need, whether of the spiritual or of the material sort, just in so far has it the value that indicates truth. So be it, let us take the pragmatic principle in the broadest, loosest, and most generous sense and not plague the pragmatist by putting to him cases of propositions, the acceptance of which would satisfy practical needs but not theoretical needs, or esthetic needs but not material needs, or my needs but not your needs. In short we will refrain from the tempting and easy task of pressing him to acknowledge some criterion for evaluating all these very distinct types of value, and allow him to say that the more value of any kind and to anybody that the consequences of a proposition have, the more likely are they to indicate its truth. There is, however, one possible interpretation of the pragmatic criterion which we must definitely bar out. We are not to understand the statement to mean that the valuable consequences flowing from a proposition are the same as its truth, or a cause of its truth, but only that they are a reliable index or symptom of its

truth. We bar out this interpretation because we have treated it at length, and by itself, under the caption of "psychological pragmatism." We attempted there to show that the identification of a truth with the criterion or process by which it is tested, led to nothing but confusion. "Valuable consequences" is not to connote "truth" in our present discussion, but is to be treated as a new test or criterion for determining truth, into the validity and implications of which we are now to examine.

Our examination need not be long. We may admit at once that generally, and in the long run, most of the true propositions have consequences of practical value, and that most of the propositions having consequences of practical value are true. There is, in short, a considerable degree of correlation between propositions that are useful and those that are true. This correlation does not hold, however, between degree of utility and degree of certainty. The proposition that there are four flies on the table where I am writing possesses a very high degree of certainty for me and for any one else who has confidence in my veracity. Its utility, and the utility of its consequences, either practical or theoretical, social or individual, material or spiritual, is assuredly very small in amount. I will not say that it has absolutely no utility, for I am using it as an illustration, and then, too, it is conceivable that some stray entomologist might wander in here and find it valuable to accept the proposition. Or again, the proposition "15,554 is divisible by 7" is virtually, if not quite, certain; its degree of utility is so small as to be negligible. Either of these propositions has a far higher degree of certainty and an infinitely lower degree of utility than Newton's laws, or than the atomic theory. But notwithstanding the complete break-down of the pragmatic criterion if interpreted quantitatively, it retains a certain sporadic and occasional value. It is, however, so far from being the sole criterion of truth that we never dream of using it *practically and concretely* except as a last resort. In the case of the belief in immortality, for example, we may imagine a man who has come to the conclusion that all the logical evidence, for and against, comes to a perfect balance, but that the practical value in matters of conduct and sentiment, to himself and to others, of holding the belief is very considerable. Such a person might be justified in concluding that for these pragmatic reasons it was a little more likely to be true than false. Yet even here I imagine that most of us would regard it as more dignified and honest to come out with a frank expression of scepticism rather than to save oneself from that unsatisfactory state by clutching at the pragmatic straw.

But if the pragmatist really takes his criterion seriously and regards it as having anything more than a meager measure of ab-

stract intellectualistic validity, why does he not test it pragmatically? Why does he not point us to concrete cases in which it is practically valuable to test the truth of a proposition by its practical value? When we consider the extent to which pragmatists fulminate against the abstract and the purely theoretical and eulogize the practical, the concrete, and the empirical, it is a matter for real wonderment that their own writings in defense of the concrete are themselves so abstract. If an empirically-minded person believed that he had discovered an important criterion for testing the truth of propositions, wouldn't you suppose that the very first and most natural thing for him to do would be to draw up, in good Baconian fashion, a statistical table of all the typically different cases of propositions having useful consequences and observe: (1) What proportion of them were true. (2) What proportion of those that were true had been found to be true by a study of the utility of their consequences. I hazard the guess that any such statistical tabulation would show: (1) That (*a*) the great majority of useful propositions are true, but that (*b*) there is still a goodly number of beliefs, such, for example, as the overestimation of your friends' virtues and the underestimation of your own, which are very useful and not at all true. (2) That of the useful propositions which are true (*a*) the great majority could only be verified by other evidence than that of the utility of their consequences, though (*b*) a considerable number could be verified both pragmatically and otherwise, while (*c*) a very select few could be tested only by the pragmatic criterion. I am not concerned to defend the correctness of this hypothetical table. I wish only to call attention to the really extraordinary fact that no one of the pragmatists has cared enough about his own theory of the correlation of utility and truth, to make any kind of decent, serious, inductive test either of its value or of its validity.

But as to the implications for or against realism of this fourth type of pragmatism—I do not see that there are any at all. The pragmatic criterion might be true or false and realism might be true or false—all quite independently.

And now finally to conclude: The terms of our question, May a realist be a pragmatist? have been defined, and the question itself has been answered under four headings corresponding to the four theories that the term pragmatism appeared to cover. We found that (1) a realist might be a pragmatist of the biological or instrumentalist type, and that an instrumentalist, to make his theory consistent, would have to adopt a realistic standpoint. (2) Psychological pragmatism, or the theory that truth is identical with verification, was definitely subjectivistic and, hence, incompatible with realism. (3) Ontological pragmatism or humanism was susceptible of two in-

terpretations, one of which is idealistic, the other realistic. (4) Logical pragmatism, or the pragmatic criterion for testing the truth of propositions by their utility, was an ambiguous theory, of dubious value, lacking empirical verification, and without any apparent bearing upon the question of realism.

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THE SOURCES OF LOGIC

THE impression that any *naïf* person gets who plants himself innocently in the flux of things is that things are off their balance. Whatever equilibriums our finite experiences attain to are but provisional.''[1] Nevertheless the flux has certain features of regularity; its habits can be learned and its code of signals understood if observation and memory are practised without superstition. The empirical world can not be made to stand still, but the unremitting operation of causality, which is one of its primary characteristics, can not be overlooked by any one bent on living there.

Under the conditions provided by nature something has been developed, presumably without miracle, that we are accustomed to call intelligence, and although the history of intelligence has melancholy chapters, progress in intelligence can not be denied. The invention of the bow and arrow, the discovery of the use of fire, the idea of a fish-hook were progress in intelligence, and I feel justified in claiming that, in an environment where causality is perpetually in operation, intelligence is the most important thing for a creature to possess, and that the creature who has got intelligence is the one that can read what I called above nature's code of signals, or so much of it as it is important for the creature to understand. An Eskimo does not need to read all the signs that an Indian of the plains must read, and neither of these is concerned with all that a navigator or an architect must know, but all of them must be able to recognize in certain instances of immediacy the conditions for the generation of determinate consequences. As a tentative definition of intelligence I suggest, accordingly, this: the capacity to read the signs of determinate consequences presented by the immediacy of an environment.[2] And man does not learn to read the signs of

[1] William James, "A Pluralistic Universe," p. 88.

[2] The present article continues the theme of two previous ones, "The Existential Universe of Discourse" (this JOURNAL, Vol. VI., p. 175) and "Knowledge and Perception" (this JOURNAL, p. 393), to which I must refer for a discussion of points here taken for granted.

nature, primarily, at least, for the glory of God or to pass the time. The environment is extraordinarily complex and full of ambiguities. A creature can not survive long among causalities that have no sign, or the signs of which it does not understand. Whether a man be a savage or a statesman, he faces an environment whose energies he may not ignore. Intelligence is, to be sure, the capacity to read the signs of nature, but they can not always be read promptly and with accurate decision. Yet one thing is always certain to intelligence, and that is that the situation is determinate, although the factors which compose it may not be yet made out. And if intelligence can operate at all among signs that are ambiguous, it operates upon specific ambiguites that present concrete alternatives but never upon situations so indeterminate that all that can be said of them is that everything is either A or not A.

A hunter, let us suppose, needs game, and he may search for it in different directions. He must choose one of the various possible routes, and he will base his choice upon his acquaintance with the facts in the case. He can hunt, let us say, toward the west or toward the south. He can not go north or east because determinate conditions, such as rivers or mountains or the direction of the wind, make it profitless to do so. The specific situation presents the alternatives, south and west, but it presents them as alternative answers to the question "Which?" Here is a situation of excluded middle that is a genuine problem, not an abstract or a verbal one. The problem character appears in the urgency of the question "Which?", and it does not appear until the question "Which?" is urged.[3] If I say, "You can pay in either gold or bank-notes, it makes no difference," there is no problem for me on that point, and if it makes no difference to you there is no problem presented in the alternatives. But what we may call the excluded middle of experience comes into play when intelligence faces the question. "Which is it?" That is for intelligence to have the burden of a problem.

The question, "West or south?" can be put in two ways: Which is the worst way? and which is the best way? The hunter, of course, is after game; he has a positive attitude toward the disjunction, G (= best change of getting game) is W or S, but which? Reflection must decide in favor of one or against the other, and if the route toward the south presents difficulties the judgment may be G is not S, meaning that if the route to the south is taken, the hunter incurs the consequences of his choice, and those consequences are rejected

[3] It might be objected that the illustration used is an arbitrary simplification through the use of only two alternatives. There might be more. This, however, does not affect the logic of the case, for, whatever the number of alternatives, the question "Which?" is addressed to a determinate situation.

because they contradict his purpose. If, however, the advantages of going westward first attract attention, *G* is judged forthwith to be *W*, with the consequent disappearance of *S*. The judgment *G* is *W* means that if the hunter travels toward the west he faces the consequences of his choice, and these consequences are to be accepted and pursued. In the concrete problematic situation, *S* = not *W* and *W* = not *S* because nature is determinate, and the question "Which?" is answered not by guessing, but by intelligently considering the facts of the case. The natural meaning of *A* is *A* is that if you adopt *A* you take the consequences; if Socrates is a man Socrates must accept the consequences of humanity. And in our supposed case *G* is not *S* is an assertion of incompatability. The hunter says: "My route toward the quarter where game may be most readily obtained is not a route toward a quarter that presents greater difficulties;" *A* is not not *A*. The principle of contradiction as a principle of incompatability thus finds its natural application in the rejection of methods that are seen to lead to unaccepted consequences. Warning, admonition, the pointing out and shunning of unfortunate consequences, is an emphasis on incompatability. The principle of contradiction appears in any prohibition which is not merely imperative but carries with it the explanation that if you do you can not evade determinate consequences which will be a contradiction of your purpose. The decision *G* is *W*, a positive expression without intended negative implications, expresses rather the interest in consequences which are seen to fulfill the purpose for the sake of which the question "Which?" was asked. This distinction between the functional appropriateness of the principle of identity and the principle of contradiction may seem forced and artificial, but we must not confuse the attitude with its verbal expression. The attitude of acceptance can be expressed in terms apparently negative, and the attitude of rejection in terms superficially positive. But whenever intelligence operates a purpose is maintained in execution to a certain terminus, but intelligence operating upon a problem is thought; and a problem is a situation of either, or, but which? And if the judgment *A* is *B* or *A* is not *C* is to signify *thought*, and not memory or revery or guessing, it must supervene upon what I have called the excluded middle of experience, and that disjunction may be terminated either by the discovery of the signs that mean satisfactory things, or of the signs that mean unsatisfactory things; the signs that identify themselves with the purpose at stake, or the signs that contradict that purpose. Any creature capable of hesitation, flight, and pursuit ought to illustrate the three so-called laws of thought, for hesitation, avoidance, and acceptance must be primary attitudes

of living beings in environments where causality is complex and continuous.

The fact that nature does show the type of regularity that enables us to infer one thing from another, that to him who has used his senses the immediacy of things does announce what may be expected of them, is what makes it possible for intelligence to develop in such a world as this one. And the resources of intelligence are observation and memory. The virtues of things do not need to be discovered more than once; a creature who could not observe, or having observed could not remember the meanings of immediacy, would be as in a world where causality had no signs; he would not be there long. To accomplish progress in intelligence is to become more and more at home in the flux, to note and take account of those sequences of consequence upon conditions that observation shows can be depended upon. Every such sequence is a universal character of nature, and nature is characterized by an infinity of what we may call universal judgments. Anybody who goes ahead confidently to do anything by a method which experience has shown to be right illustrates unconsciously this feature of the world. In such a world it is then quite inevitable that the technique of adaptation, of living and prospering in the flux, should give us the universal judgment, which just because it is a rule is not an existential judgment. People in various parts of the south like to keep away from places where rattlesnakes are numerous. There may not be any snakes there or anywhere else, but if one should get bitten by a rattlesnake the consequences would certainly be very disagreeable. An engineer or a superintendent of construction often carries in his pocket a little book full of universal judgments. There is no mystery whatever in the fact that these technical rules are not existential judgments. Both the southern pedestrian and the engineer are interested in propositions that are really true and really timeless, and guaranteed by empirical nature. To know what to do on a given occasion is to bring a universal judgment to bear upon an existential judgment. The pedestrian when he hears the sound of a rattlesnake should stand perfectly still. Thus we might call the existential judgment, the judgment of perception and the universal judgment, the judgment of intelligence. And the latter is applicable to the former just because immediacy is a sign of determinate consequences.

Thus things show what we may call substantive and transitive aspects, and if language is to be an instrument of intelligence its grammar must be adapted to the typical complexities of its object. Unless we assume language to have had a miraculous origin, it is impossible, it seems to me, to avoid the conclusion that grammatical

relations must reproduce in some way the most significant relations in the world where the user of language must seek to prosper. Now whatever the verbal symbols may be, an attitude is expressed in a sentence, the qualification of a substantive by a verb, and although I have no particular evidence upon which to argue the point, it does seem to me well worth some inquiry to ascertain whether or not the realtion of substantive to verb may not reproduce a relation analogous to that between what I have called immediacy and causality. There can be no doubt that philosophy has hitherto sought to describe the world too exclusively in terms of the substantive aspect. It is at least permissible to urge the importance of the verb.

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DISCUSSION

PRAGMATISM AND REALISM

PROFESSOR MONTAGUE'S interesting and characteristically lucid series of papers on this topic is, I hope, to be continued. In those which have thus far appeared certain considerations pertinent to the subdivisions of the topic already dealt with have, as it seems to me, been overlooked. These considerations I think it worth while to point out, in the hope that Professor Montague may take occasion to revert to them in some subsequent instalment of the series. The determination of the historic affinities and logical implications of a doctrine so influential, and so characteristic of our time, as pragmatism, has, at the least of it, great historical interest to those who desire to understand, logically and psychologically, the complex and curious interplay of intellectual motives from which the ruling tendencies of the time result. There is, to be sure, in a sense, no such thing as pragmatism; that doctrine is not a well-defined substantive entity, a logical brick that can be passed from hand to hand, microscopically analyzed, and broken into pieces, all without essential alteration or loss of identity. Few of the historic schemes of doctrine for which we happen to have names are things of that sort; and for that reason, most of the innumerable controversies of the past over the question whether one -ism or -ity is compatible with another, have been unedifying examples of circular reasoning. Whether, for example, Christianity is compatible with pantheism—a subject that has been much debated—depends, obviously, entirely upon your definition of Christianity; but the term "Christianity" as the name of a collection of historic phenomena—the opinions or tendencies of persons called Christians—has at all times embraced a great number and diversity of elements. It is

possible to take any one of these that you please, declare it to be "essential" or "fundamental," and then proceed to prove anything you please upon the question at issue. But there is no objective reason for considering one more essential as a characteristic of the historic complex termed Christianity than any other, unless it can be historically shown to be either (*a*) the sole, or (*b*) the most emphasized, teaching of the actual originator of the movement, or, at least, (*c*) a teaching never previously expressed or emphasized, a novel contribution to the world's stock of ideas. So, too, pragmatism is a historic complex of mixed philosophical motives and tendencies. There is danger, on the one hand, that in discussing its affinities with other doctrines one pick out arbitrarily some one element of the complex, or a few elements, and by analyzing the implications of these prove the pragmatist to be a realist, or a solipsist, or a positivist, or an anarchist, or an ontological Mormon, or what you will. On the other hand, it would be equally an error to assume at the outset that there is no one pragmatism *par excellence,* no trait of the group of doctrines going under the name and usually combined in the same minds, which is so peculiar and exceptional historically as to deserve better than any other to be regarded as distinctive and essential. Only, it remains to find, in the specific instance, the criterion of such essentiality and to discover the feature of the doctrine in which it is realized. To these ends it is requisite, first, to make a complete enumeration of all the more important ideas or logical motives emphasized in the actual utterances of persons willing to call themselves pragmatists; second, to see whether any one of these motives separately, *or the fact of their combination,* is, historically speaking, a relatively novel and distinctive contribution of this particular movement to our collection of more or less coherent and intelligible types of doctrine upon philosophical issues. Unless these precautions are taken, discussion upon the affinity of pragmatism for some other -ism will not really deal with any "objective" or historical thing called pragmatism, but only with the compatibility *inter se* of certain propositions arbitrarily drawn up by the person who starts the discussion.[1]

Now, Professor Montague's argument may, I think, be objected to on the grounds (1) that it hardly sufficiently recognizes one de-

[1] Pragmatism as a term bandied about in philosophical discussion ought *not* to mean merely the total complex of doctrines that chance to be joined together in the minds of persons—or in the mind of the first person—denominated pragmatists. If we are to use this type of term, and are to avoid muddle, we must, I should insist, on the one hand give it some historical reference to some real stream of tendency; yet we should, on the other hand, subject that tendency to both logical analysis and historical comparison, in order to pick out what is original and distinctive in it, *if, indeed, there be* any such distinctive factor.

cidely important and much-emphasized motive in the teaching of the pragmatists; (2) that it overlooks the fact that there is something novel and unique in pragmatism and that this unique characteristic consists chiefly in the *transformation* of the instrumentalism, of which he speaks in his second article, through its conjunction with the neglected factor—so that the instrumentalism of the pragmatist is not mere instrumentalism, but an instrumentalism of a special coloring.

1. One of the things that the pragmatism of James is, certainly, is a modern expression of the motive which, in certain other expressions, is known as nominalism or positivism. In his original volume of lectures on the subject, James showed very plainly that he was in the line of the great nominalistic tradition of English thought, a successor of William Ockham, of Hobbes, of Locke and Hume and Berkeley. The problems of philosophy, even the aspirations of religion, were to be simplified, by confining thought to its proper objects of reference, by explaining to the mind the real limits of the meaning of every proposition it could frame. And the secret of this simplification was to lie in reducing all meaning and all verifiable truth to a "pointing" to "particulars in concrete experience." Enumerate those particulars and you have the whole meaning of any proposition; discover the smoothness and satisfactoriness of the transition from the particular concrete experience constituting the judging moment to the subsequent concrete experience to which it pointed, and you have verified truth. The doctrine was, indeed, in a sense the last and completing word of the whole secular movement of nominalistic empiricism; where the medieval nominalists had applied the demand for the reduction of the meaning of abstractions to concrete and empirically verifiable particulars, chiefly to the miscellaneous hypostases of Platonic realism; where Hume had applied the same demand to the notion of cause, and Berkeley to that of material substance; James applied it, in a still more fundamental manner, to the notion of truth itself. The truth was to be reduced to truths; and each truth must be statable in its "cash value." "Truth" was to be the name, not of a mysterious essence, nor of an abstract quality, nor of a bare relation; it was precisely a kind of experience, having in each case a time and place and individual *quale* in the flux of experience. The typical nominalistic motive—the simplifying, clarifying, *denkökonomisch* motive; the typical nominalistic method—the definition of universals as collective names for particular items in experience; the typical nominalistic result—the rejection as negligible, if not demonstrably unreal, of all entities incapable of being brought within the compass of concrete experience—these are all conspicuously present in the most authoritative exposition of the

pragmatic doctrine. Professor Montague seems to me to have scarcely noted sufficiently the rôle of this familiar and ancient motive in the new movement.

Now, nominalistic empiricism in epistemology has always made for idealism in metaphysics. Idealism, though it is a good deal more, is primarily the application of the law of parsimony to ontology. It refuses to multiply entities beyond necessity; and it finds no necessity for adding anything to their immediate, empirical face-value. That a tendency of thought in which the nominalistic temper is so marked should be thought naturally to incline to realism is surprising; that any part of it should be held necessarily to imply realism indicates a paradox on the part either of the holder of the doctrine, or of the critic who finds such an implication latent in it.

2. It is true, however, that pragmatism also means instrumentalism. But its instrumentalism, it seems to me clear, should be construed in the light of its nominalism, of its demand for the reduction of all meanings to concrete particulars of experience stated in their most "economical" terms. Professor Montague has taken pragmatism too atomistically. What has been called pragmatism is, as I have maintained, a medley of diverse logical motives. Some of these I believe to be actually incompatible with one another. Most of them have on occasion been put forward separately and disconnectedly by pragmatist writers. Yet it can not be denied that several of them are capable of being harmonized. And when we are interpreting pragmatism we ought to take as many of its elements together as logic permits, and let the elements thus synthetized modify and interpret each other. We may thus be able to see in at least some phases of pragmatism a more or less novel doctrine, even though its constituent parts be not novel. It would be a new compound in intellectual chemistry.

Instrumentalism certainly—as "the courageous application of Darwinism to the life of reason"—is, in its most general definition, by no means a novel doctrine. The substance of it is to be found in the evolutionary empiricism of Spencer: thought is an incident of organic adjustment to environment, and its categories are the result of successful and biologically advantageous adjustments. In Spencer this doctrine appears in a realistic form and with an intellectualistic temper, very much after the fashion sketched out by Professor Montague on pages 486–7, 489–90; such a form and temper are thus not uncongenial to instrumentalism, in the extremely broad sense there given it. But pragmatism is not simply a re-editing of the evolutionary empiricism of Spencer and Fiske and of a host of Darwinizing epistemologists. Its distinctiveness consists precisely in the fact that it combines instrumentalism and the method of nominalism.

It does not take the doctrine that knowledge is an instrument as meaning that it is a copying or duplicating instrument, designed to receive an impress or decalc of an "environment" there independently. Pragmatism appears to propose a simpler, more economical, more rigorously empirical, and concretely verifiable, way of construing the instrumental relation.

It remains, indeed, to ask whether these two motives, instrumentalism and nominalism, are truly harmonious. Professor Montague thinks not (pp. 486–7). But in this I think one must say that he merely exhibits that double vision characteristic of the realist by temperament and connatural predestination—without really presenting to those of a more nominalistic turn of mind convincing reasons for thus beholding the entire universe as twins. Certainly he begs a good deal of the question, marching to his realistic conclusions very calmly without casting a glance by the way at the most characteristic arguments and cherished distinctions of the pragmatist. For the pragmatist—whether he eventually profess realism or not—quite explicitly defines his more *denkökonomisch* way of interpreting the instrumental function of knowledge. He recognizes, indeed, that a serviceable instrument must somehow fit into something other than itself; instrumentalism always implies *some* sort of correspondence. But this correspondence, the pragmatist points out—if I have ever at all understood him—need not be a correspondence of something in conscious experience with something independent of conscious experience; it need only consist of a system of cross-references within the unbroken context of experience itself, between temporally sundered moments of the flux of existence. If one thing more than another is the *bête noire* of nearly all of those called pragmatists, I had always supposed it to be the copy-theory of the judgment. It is, in fact, as much on instrumentalist as on nominalist grounds, as I understand it, that the pragmatist has objected to that theory. It does not serve any useful purpose whatever for an idea to match either a simultaneously-existent, or an eternal, object; what is pragmatically important is that this moment's thought should forecast, or advantageously lead into, some future moment's experience. In short, pragmatism substitutes inter-temporal for trans-subjective reference, in its interpretation of the criteria alike of "serviceableness" and of "objective validity." This does not seem to me an altogether true or adequate view; but it seems to me a definite and intelligible one; and in so far as instrumentalism is a part of the group of doctrines that have been designated at various times as pragmatism, it seems to me to be this particular, this nominalistic, variety that is so far novel, distinctive, and important as to deserve to have the designation applied to it. This

kind of instrumentalism I personally believe to be idealistic in its logical tendency; but, since the defense of that view would require further argument, I will in the present discussion not go so far; I will say only that it does not either necessarily or naturally make for realism. It leads *either* to idealism or to a *tertium quid,* a view in which the traditional subject-object dualism, which constitutes the starting-point of the ordinary controversy between realist and idealist, is abrogated and transcended. Into an examination of the relational theory of consciousness I do not want here to enter. I am content, therefore, to leave it as a pragmatic alternative to idealism, maintaining only that, at any rate, if it is in any degree a new or distinctive theory, it must be distinct from dualistic realism of the ordinary sort; while if it is not distinct therefrom, it is incompatible with, the nominalistic instrumentalism of the pragmatist. In any case, Professor Montague's realism (*e. g.,* p. 487) seems as frankly dualistic as any ever was, and as fully committed to the copy or duplication theory of knowledge. This, I should agree, is the one perfectly intelligible and clearly definable realism, the only one rightly to be so called. And it is such realism that I understand to be here in question. In view, then, of what has been said above of the characteristic *nuance* of pragmatic instrumentalism, and in view of Professor Montague's failure even to essay to show that that *nuance* results from an inconceivable combination of ideas, I can not see that he has proved that "an instrumentalist *must* be a realist." I even apprehend that it would be difficult for any one to prove (though I know the task has been attempted) that the pragmatist *may* be a realist. He ought to be either an idealist, or what for the present I can only call an anti-dualistic *x*.

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REVIEWS AND ABSTRACTS OF LITERATURE

Social Education. COLIN A. SCOTT. Boston: Ginn & Co. 1908. Pp. xi + 298.

No essay in education since Dewey's "The School and Society" has won recognition so immediate and so marked as this volume of Dr. Scott's, and none, I think, has so well deserved it. The book enjoyed, to be sure, certain advantages at the outset. Nowadays the adjective "social" is in most fields a shibboleth; and in the field of education Dr. Scott voices a definite movement, which has already produced a quarterly, a congress, and a club—a movement, he declares, "destined to stimulate the deepest, the most progressive, and the most characteristic elements in American education." To be thus timely and thus heralded, however, is happily

but a pleasant circumstance in the production of a work notable for breadth of outlook, for discriminating analysis, and for practical helpfulness. School teachers need not be sociologists to find in "Social Education" suggestions which they can use at once in their class-rooms; yet they can not escape from Dr. Scott's persuasive pages with a mere collection of devices, to be used without reference to a central conception, but will get, rather, what they most need—a new point of view from which to attack their daily work. School officers will find in the book a philosophy to preach and reforms to practise; indeed its lessons are in a sense less for teachers than for superintendents, who are often the blinder slaves of experience. Students of education, finally, are indebted to Dr. Scott for an illuminating restatement of educational aims and for a treatment of the school, its limitations, relationships, and methods, which is, of its kind, at once novel and final. In short, no one who thinks about education at all, even if he has never heard of the social movement, can afford to miss the book.

It must not be supposed, however, that Dr. Scott has written an exhaustive treatise. "The aim of this book," says the preface, "is to put at the disposal of its readers a point of view rather than a completed system of thought." Accordingly, of twelve chapters two present the social point of view in education, three compare it with analogous but practically divergent points of view, and the rest illustrate its effects in various phases of school procedure. There is no attempt to raise and solve educational problems in which social values are not directly at stake, and the book remains, therefore, a constructive and inspiring essay rather than a manual of pedagogy.

For this limitation of his undertaking surely no one who reads the book will blame the author. Dr. Scott has taken the social point of view seriously and concretely. He does not theorize vaguely and blandly, covering every sort of work in the schools with a convenient blanket-conception; nor does he idly condemn. His theory is thought through, and is inseparable from definite and somewhat radical proposals for practise. Yet it is not a theory which sanctions over-rigidity of school management, or under which an author might properly lay down many rules. The point of view is itself the vital thing, as indeed it must be in a science so thoroughly ethical—so human—as education. "The experiences described in this book," Dr. Scott expressly states, "are therefore nothing more than cases. . . . The point of view or method of thinking is the essential factor which makes for liberty, social cohesion, and thoroughness. These same educational requirements can be realized in entirely different forms."

What, then, are the requirements of the social point of view in education? Almost the only stiff and forbidding sentence in the book sets these requirements forth most compactly: "The state and the school can avoid the evils that threaten them only by a more comprehensive and deeper social synthesis organically united with a freer and more thoroughgoing individual development." The republic, that is, needs men and women of larger initiative, better trained to cooperate for the common good. But the school can not develop initiative when its policy is a policy of repres-

sion, nor can it train cooperation when it carries on its work wholly, or chiefly, by the method of competition. So much others have said before, notably Professor Dewey: as Dr. Scott quotes—"Upon the ethical side the tragic weakness of the present school is that it endeavors to prepare future members of the social order in a medium in which the conditions of the social spirit are eminently wanting."

The conditions of the social spirit should be present, then, in all the work which the school undertakes: a class is a community, not a collection; studies are not like medicines, for individual consumption, but for social use. What this means in the class-room Dr. Scott shows in his chapters on various branches of school work; and if he presents an ideal somewhat beyond the inexperienced teacher, he proves, nevertheless, that social method, well-handled, means for the pupil a firmer grasp of the subject, a fuller exercise of his individual powers, and better than all, a training in cooperative thought and action. But even this is not enough. The mission of Dr. Scott's book is to demand recognition for an aspect of the school which every dictated course of study inevitably ignores. "The school," he says, "is something more than a mere extension of the state or the home. It is a social combination, with social feelings, sentiments, and needs of its own. By constituting it at all, society has constituted it a social organism, certain to produce definite social changes in the brains of its members." In other words, we must recognize that children in school, like their elders in the world, are bound to be living a social life. They organize themselves into a community before our very eyes; they have their cliques, their leaders, their purposes, combats, treaties. It is in this life of their own organizing, not in the work they do at their desks, that they get their best training in cooperation and win their largest measure of individual development. This is the life we should lay hold of, foster, guide, develop.

The greatest defect of the school is thus the lack of properly guarded freedom for the play of the social forces that actually exist among the children. To establish in the regular work of the school the conditions of the social spirit is good, but we must also utilize the spontaneous social life of the pupils. They should be permitted to form plans of their own and to carry them out in groups of their own choosing. "If liberty and obedience, characteristic of smaller groups . . . of a vital and focalized social character, are a possible combination for the young, there is no reason why . . . [self-organized group work] . . . should be left out of the school . . . [even if the school] . . . primarily represents the state. Social groups of adults in society at large are always in contact with the state, but in such a way as not to prevent their real freedom. In the school the teacher represents the state as well as society at large. If children's groups are left . . . to be formed on the street or the playground, they are left without proper protection and hindered in their normal growth. As a consequence they tend to relapse into organizations for mere play. And even play is not sufficiently protected. It is cut short on every side. Fifteen minutes here and half an hour there is not continuous enough for the carrying out of the best plans of which even play groups are

capable. Lack of facilities, especially in cities, hampers their best development. The haphazard contact with the state through the policeman, or other members of adult society, tends to make such activities as may be undertaken haphazard themselves and deficient in true social significance. That contact with the state, which the state has itself devised as being suitable for children, namely, the contact with an intelligent, learned, socially-minded, and sympathetic teacher, would appear to be the only condition in which such groups could find the aid and protection which they need. It is only under this condition that we may expect them to go further than play and undertake real and serious work."

This is Dr. Scott's special doctrine of self-organized group work. On "a background of the dictated course of study" he would provide time for this work as nearly as possible up to the limit of the pupil's capacity for it. The "essentials" would be only the better taught and learned, for the group work would be a laboratory for their use and a test of the pupils' grasp of them; but the ethical value of the self-organized work itself is of course the main reason for urging it. And one can hardly doubt its value. "Newspaper educators," "old-line schoolmasters," college professors who casually condemn all educational theory—these will arise to scoff at Dr. Scott's proposal; but there will be others in plenty to range themselves on his side, and in the end social education will become a fact. The present reviewer has but one doubt to express, and that is a doubt as to method rather than as to principle. Children come to the school with a stock of native instincts, impulses, and powers, which the school must use. Society demands, on the other hand, that they shall acquire certain habits and know certain facts. In a sense, therefore, school teaching is the attempt to turn the native activities of children into the channels preferred by adults. Now Dr. Scott, in common with others, proposes that the habits and the ideas desired by society be so organized that the children can learn them by the exercise of their native powers *socially*—that is, in active cooperation; but, besides that, he proposes also that they be given extra time in which to use their powers for purposes of their own, on plans of their own making. This is necessary for the reason that children get little development of intention, initiative, or purpose, in the regular school work, even when it is organized socially. They can not appreciate the adult point of view which demands that they shall sit up straight and learn the multiplication table; they are not really exercising their power to conceive and carry out a purpose when they join to make some object for which the course in manual work provides. *Until they can enter into the purposes of society in establishing a course of study,* school work must therefore remain essentially compulsory, and some other field (like group work) must be found in which to train free initiative and free cooperation. *But gradually children do enter into the purposes of society in establishing the school,* and if they are trained in purpose by the method of social education, they will, no doubt, do so sooner and more strongly. There comes a time when the boy takes charge of his own life, views its opportunities and necessities, and can be led to form an ideal to which thereafter he shall subordinate transitory

desires. Then, as it seems to me, self-organized work is no longer necessary. To this point it should itself have led. Laboratory investigation in groups is highly desirable, and the subjects of such investigation may well be chosen by the pupil, subject to the integrity of the course of study; but the time for doing anything he may propose has gone by, for now he should be led to subordinate his casual purposes to a central purpose and to submit to a course of study which he has himself chosen as best suited to make him the sort of man he wants to be. This change in the nature of desirable group work Dr. Scott does not make clear, if indeed he recognizes it.

Happily (oh, most happily for those who read much pedagogy!) Dr. Scott's style is engaging, fluent, rich. For the sake of books much hoped for from his pen, the present reviewer suggests, with apologies, one slight change—a clearer and more explicit statement of the main theses, both in the text and in the table of contents.

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La naissance de l'intelligence. GEORGES BOHN. Paris: Ernest Flammarion. 1909. Pp. 350.

An impetus to the advancement of scientific method in animal psychology is presented in this work. By means of objective study, it endeavors to substitute for vague words and anthropomorphic interpretations, analytic description of animal activities.

After an historical survey of the subject, in which the opposed tendencies of anthropomorphism and pure automatism are contrasted, the present status of existing problems is outlined. The author finds the most fruitful method for the analysis of psychic phenomena to be the "ethological," "the study of the relations of living beings among themselves and with the diverse modalities of the exterior environment." In the discussion of the different problems considered the author has gathered together the various isolated contributions to the subject and thereby rendered an important service to modern comparative psychology.

A review of the various criteria advanced for the determination of "psychism" in animal activities shows them to be generally unsatisfactory. The morphological tests do not agree and the functional determinations likewise prove inadequate. To say there is psychic activity when an animal learns, chooses, etc., tends to a discussion of words rather than to the discovery of facts. By giving a purely objective definition of "psychism" —viz., the association of sensations—the question as to the possibility of a comparative psychology is removed. Mere variability of reactions does not suffice as a criterion of psychism. It is the analysis of the variability of reactions, the discovery if the origin of these is organic, peripheral, or central, which furnishes the means for the objective determination of psychism. It must be remarked that in this problem of psychism there is no question as to the subject of consciousness, but rather a purely biological interpretation of the mechanism of reactions.

And now the way is prepared for the discussion of facts. Book III., which contains perhaps the most important contribution of the work, passes to the consideration of the "Dynamics of Psychic Phenomena." The author combats the anthropomorphic interpretations of the activities of the inferior animals, and seeks to discover the laws which regulate these phenomena. Observation and experiment lead to the conclusion that certain biological notions are generally adequate for the explanation of the movements of the inferior animals (infusoria, polypes, worms), and there is no requirement for a psychological interpretation, such as will, choice, etc. The notion of tropism is of fundamental importance in the mechanism of reactions. By tropism is understood those irresistible movements of the animal made in response to forces of the exterior environment. Many misunderstandings of this notion are due to the failure to recognize the influence of the law of symmetry in excitations, which causes the oscillatory movements in the phenomena of tropisms. A second essential characteristic of animal activities is that of "differential sensibility" (a conception employed for the first time in a work on comparative psychology). Responses are modified by variations in the acting force. If Jennings had recognized these manifestations of differential sensibility, his theory of "trials and errors" would have been superfluous. The activities, which Jennings attributes to the result of trials and errors, are shown to be due to the superposition of differential sensibility upon tropisms. Again the manifestations of vital rhythms (an original chapter of the book) must be considered in the mechanism of animal activities. Certain periodic activities of animals are the result of chemical changes induced by regular variations in the environment. This purely biological phenomenon has no need of such psychic explanation as prevision of the future on the part of the animal.

It is important to distinguish between reactions which are the result of a combination of motive impulsions and those which respond to an association of sensations (sensation in the physiological sense). In the former case the movements are automatic and obey the laws of mechanics and physics. In the second instance the reactions do "not obey directly the force of the exterior environment, but rather special states of the system of coordination (the nervous system) provoked by the complexes of external excitants. Here we have an association of sensations, "psychism." Among the inferior animals (polypes, worms, mollusks) there is no evidence of any predominating psychic activity. Tropisms, differential sensibility, and their combination, are the determining characteristics. Psychism among these animals is "rudimentary."

Proceeding to the discussion of the reactions of the more highly organized animals (articulates, vertebrates), we are confronted with the phenomena of the "Acquisition of Habits" (Book IV.), phenomena which involve the association of sensations or psychism. The rôle of vision is fundamental in effecting this psychic revolution. The author combats the mechanistic interpretation which would make vision an example of tropism. In tropism a single reaction is possible, while in

vision there is forcibly a choice. Experimental researches on the acquisition of habits have given rise to two opposed attitudes of interpretation; the mechanistic, which sees in these phenomena only the result of a combination of tropisms; and, on the other hand, these manifestations are explained as results of association of sensations. The tendency to explain everything by tropisms is deplored. In such phenomena as "the return to the nest," "the recognition of objects," "the relations of insects and flowers," there is evidence of association of sensations. The confusion of tropism and associative memory may be partly explained by the fact that in associative phenomena one element is more predominant than others in exciting activity.

In the discussion of finality in animal psychology it is maintained that adaptation to an end is no reason for qualifying an act as psychic. Thus the search for nourishment may often be explained by tropisms and differential sensibility, acts purely mechanical. Again, what are generally denoted as reflex movements can not be termed psychic, since they are not of central origin. If the fact that an act is adapted to an end established its psychic character, all nature would be psychic.

A review of the classic conceptions of instinct shows little accord as to the significance of this term. The word has been used to cover phenomena as diverse as tropisms, differential sensibility, and associative memory. The word is simply a word, of little service in scientific investigation. The conservation of this term has led to the opposition of instinct and intelligence, which notions may be more profitably comprehended as two stages of the same process.

The book concludes with a sketch of the probable evolution of psychism. This development has been generally accomplished by "psychic revolutions." We encounter the first psychic revolution in the perfecting of the receptive organs (primarily the eye). The second great development appears with the vertebrates in the formation of a registering apparatus, the brain. Here for the first time it is correct to speak of intelligence. The author denies intelligence among the articulates, and finds there "only a favorable soil for the birth of intelligence." The third psychic revolution takes place with the advent of man.

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JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. August, 1909. *Les théories de l'attention* (pp. 119–139): N. VASCHIDE and R. MEUNIER. – An exposition of various theories of attention. From their consideration the authors conclude that (1) we are insufficiently informed with regard to the psychological mechanism of attention; (2) attention is intimately connected with an emotional state; (3) attention is a psychological phenomenon of central origin; (4) attention is an essentially dynamic function. *L'origine du droit et du devoir* (pp. 140–162): R. SALEILLES. – Right and

duty are two aspects of the same phenomenon of consciousness. The source of the conception of the right lies in the individual; conception is a constituent part of consciousness. It is based upon the double sentiment of individual personality and social duty. *Du temps où la Scolastique latine a connu la Physique d'Aristote* (pp. 163–178): P. DUHEM. – The influence of the "Physics" is first seen in scholastic writings of the first half of the twelfth century. At that time doctrines from the fourth book find expression in works of Thierry de Chartres, Gilbert de la Porrée, and Guillaume de Couches. *La détermination des concepts de matière, d'entendement et de raison dans la philosophie de Schopenhauer* (pp. 179–199): J. LOUIS. – A matter which is nothing without thought, but by which thought spreads over the world a dangerous veil of illusion; an understanding which is merely the objective correlative of matter or causality; reason, which, however, derives from intuition its entire significance and content—these are, according to Schopenhauer, some of the principal concepts of the theory of knowledge. *Analyses et comptes rendus:* E. Naville, *Les systèmes de philosophie ou les philosophies affirmatives.* H. Sturt, *Idola Theatri. A criticism of Oxford thought:* E. BARON. E. H. Schmitt, *Kritik der Philosophie vom Standpunkt der Intuitiven Erkenntnis:* P. CHARLES. N. Vaschide, *Psychologie de la main.* J. B. Pratt, *The Psychology of Religious Belief.* P. Gauthier, *Reflets d'histoire:* T. DE VISAN. G. del Vecchio, *Presupposti filosofici della nozione del Diritto:* C. BOUCAUD. K. Ollion, *La philosophie générale de John Locke:* E. BARON. K. Jungmann, *René Descartes, eine Einführung in seine Werke:* H. LÉARD. P. Tisserand, *L'Anthropologie de Maine de Biran:* LOUÏS-LÉDA. *Périodiques.*

Abbot, E. Stanley. *Forms of Insanity in Five Years' Admissions to, and Discharges from, the Hospitals for the Insane in Massachusetts. American Journal of Insanity.* Vol. LXVI. No. 1. July, 1909. Pp. 111–122.

Diefendorf, Allen Ross and Raymond Dodge. *The Experimental Study of the Ocular Reactions of the Insane from Photographic Records. Brain.* Vol. XXXI. Pt. CXXIII. 1908. Pp. 451–489. *American Journal of Insanity.* Vol. LXV. No. 4. April, 1909. Pp. 798–800.

Packard, Frederic H. *The Munich Psychiatric Clinic.* Reprint from State Board of Insanity. 1909. Boston: Wright & Potter Printing Co., State Printers. 1909. Pp. 5.

Rowland, Eleanor Harris. *The Right to Believe.* Boston and New York: Houghton Mifflin Co. The Riverside Press, Cambridge. 1909. Pp. xv + 202.

Wells, Federic Lyman. *Motor Retardation as a Manic-depressive Symptom. American Journal of Insanity.* Vol. LXVI. No. 1. July, 1909. Pp. 52.

Wells, Federic Lyman. *Sex Differences in the Tapping Test: An Interpretation. American Journal of Psychology.* Vol. XX. July, 1909. Pp. 353–363.

NOTES AND NEWS

At the opening of the New York College of Physicians and Surgeons Dr. Christian A. Herbert spoke on "Imagination and Idealism in Medical Science."

William James's most recent volume, "The Meaning of Truth," a sequel to "Pragmatism," is just published by Longmans, Green, and Company.

Professor Paolo Raffaele Troiano, of the University of Turin, died in that city on June 9. Professor Troiano was the author of "La filosofia morale e i suoi problemi fondamentali" and "Basi dell' umanesimo."

Moffat, Yard and Company announce the publication of a book by Sir Oliver Lodge, "The Survival of Man: A Study in Psychical Research."

Roberto Ardigo has agreed to undertake a work on the history of Italian philosophy.

G. N. Gilbertson (A.B. University of Minnesota, 1908, A.M. 1909) has been appointed instructor in psychology at the University of Colorado. Mr. Gilbertson will take half of the work of Professor Henmom, who is this year acting dean of the University.

The last book of Dr. Pfeiderer, "The Development of Christianity," is to be published shortly by Mr. Fisher Unwin. The book is a sequel to the volume by Dr. Pfeiderer on "Christian Origins," and comprises the subject-matter of a course of lectures delivered at the University of Berlin.

The third congress of the *Societa filosofica italiana* is to be held at Rome October 27–31 of the current year. The program is as follows: Inauguration of the congress, opening address of the president, by Professor Giacomo Barzellotti; papers and discussion on the topic, pure philosophy and the history of philosophy, October 28; philosophy and science, October 29; philosophy of morals and philosophy of religion, October 30; economics, sociology, pedagogy, and esthetics, October 31; continuation of discussion on philosophy and the history of philosophy. The next congress is to be held at Bologne in 1911.

The *Athenæum* for September 25 prints the following note: "Dr. Kalisher, of Berlin, has made some experiments which form curious reading on the sense of music possessed, or rather, which can be acquired, by dogs. He appears to have trained a dog to accept food only to the accompaniment of a particular note on the organ or harmonium, and to refuse it if a neighboring note differing from it by no more than a semitone is played; and these experiments have been confirmed by Dr. Seljonoï, of St. Petersburg, who declares that if persisted in, the particular note associated by the dog with his meal will produce salivation to the exclusion of all other sounds, and that the memory of it will endure for as long a period as two months."

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PARADOXES IN NATURAL REALISM

THERE is a prevalent philosophic sentiment that the concept of experience called natural realism is hopelessly paradoxical. Now a paradox, in philosophy, is an apparent self-contradiction which, if genuine, would disqualify the theory containing it. Its service is that of reminding us of the duty of consistency. This service, however, is not always beneficial, since it often happens that a mere appearance of contradiction, which might conceivably be removed by careful analysis, is taken as a warning of a philosophical *impasse* and diverts the wayfarer to some other direction ultimately quite as hopeless. What we need to learn in such cases is whether there is involved an affirmation and a denial of precisely the same character in precisely the same fact, for only this is a fundamental inconsistency. Inasmuch as natural realism stands closer to the uncritical "common-sense" view of experience than do other theories, it has a presumptive claim upon criticism; the latter, before it turns to metaphysical interpretations farther removed from the ordinary view, is under obligation to ascertain whether the paradoxes which reflection unmistakably discloses in the realistic statement indicate inevitable self-contradiction.[1]

The special difficulties under consideration here are well introduced by Professor James's observation that "the whole philosophy of perception from Democritus's time downwards has been just one

[1] The easy identification of paradox and contradiction is well illustrated by the following recommendation of "the new realism": "there are no other theories in the field that do not lead either to the paradoxes of subjective idealism or to the still greater paradoxes of psycho-physical dualism and parallelism." Professor Royce observes that "the paradox of this history [of realism] is that while the realistic metaphysic begins as the very voice of common sense, the more developed and thoroughgoing realistic systems show a character which has made realism, from the Sankhya, to Herbart, or to Herbert Spencer, the breeding place of a wholly marvelous race of metaphysical paradoxes" ("The World and the Individual," Vol. I., p. 109). He justly adds, however, that "the mere seeming of paradox is in itself no refutation of a philosophical doctrine" (*l. c.*, p. 132).

long wrangle over the paradox that what is evidently one reality should be in two places at once, both in outer space and in a person's mind.''[2] Elaborating the puzzle somewhat, natural realism asserts (1) that the real character of external objects is directly perceived, that their manifold qualities and ways of behavior are to a great extent as they seem to be, and are thus ''independent'' of knowledge; (2) that cognitive consciousness, which is a peculiarly experienced ''stuff or quality of being,'' has a formal character of ''objectivity'' or ''objectification''; and (3) that this formal objectivity and the real object are both present in, and constitutive of, perceptive cognition. We have here, in the distinction between real object and formal objectivity, a ground of ambiguity and confusion which easily suggests logical inconsistency. The same object, it is critically alleged, is variously located in space, or in time, or in the physical and the mental realms, or partly here and partly there, and this amounts to a virtual affirmation and denial of any definite status. This paradoxical character in the account of perception given by natural realism underlies many a rejection of the latter, sometimes as the object of explicit criticism, oftener as the source of uncritical prejudice. Of the many motives which determine our epistemology it is one.

The important problem thus raised is, then, primarily logical:[3] Assuming the dualistic structure of experience, as described by natural realism, do our various assertions, if carefully understood, contradict each other? More concretely, does natural realism imply that the same object—thing, quality, or relation—is inconsistently located in different departments of reality?

One phase of the difficulty is easily removed. Whatever the precise meaning of our terms when we say that a perceived object is in the physical world and in consciousness, we do not mean that it is in two separate spots in the same real space. The ''objective form'' of consciousness is not located by natural realism in the brain or in real space at all. The dependence of consciousness upon the nervous system easily generates the misconception that the former is spatially separated from its real object; but, strictly speak-

[2] This JOURNAL, Vol. I., p. 481.

[3] With the more distinctly empirical aspect of the problem, namely, the question whether consciousness, as traditionally defined, really exists, this discussion is not concerned. It is astonishing, however, to note the ease with which a conception resting upon a multitude of supposed empirical facts, gradually organized through centuries of tedious reflection, and possessing a wealth of descriptive terminology, is frequently rejected. The opinion that the traditional matter-mind distinction is an "artifact," and the parentage of illegitimate puzzles, will hardly be established without a more careful account of such experiences as memories, dreams, illusions, ideals, etc., than has yet appeared.

ing, the object is neither outside nor inside the conscious perception in a spatial sense. The confusion of "spatially external to the organism" with "spatially external to consciousness" belongs in the category of those underlying prejudices which warp criticism. It is insufficient to say, against this, that the supposition of a non-spatial consciousness is meaningless. For at this point the question becomes empirical: Do the alleged facts of "consciousness as such" appear in real space? and with this question we are not concerned, any more than with the question "how" can a spaceless state of mind know a spatial fact. The point to be observed here is that the paradox of objectivity as a form of consciousness perceiving a real object does not imply the contradiction of locating that object in two different *places*.

The paradox remains, however, for, although perception and object are not spatially separate, we nevertheless seem to locate the same fact in two orders at once, *i. e.*, in the physical world and in the stream of consciousness. And this, it is declared, is a virtual contradiction. The reply is that if we are careful in our statement we do not identify the perceived fact and the perceiving fact, the object and our perception of it. We do not say or imply that the same bit of reality is both a mental process and a physical fact, unless by "bit of reality" we expressly mean the complete cognitive experience as including both. Reflectively, we explicitly distinguish between the psychical process and the thing perceived. Pragmatically interchangeable the two are indeed; we *use* the thing and our perception of it together, and for the most part need no distinction between them. But if our practise fails in any important particular we promptly acknowledge that our experience had a dualistic structure, as when, for example, in crossing a street at night one steps on an apparent flagstone and finds it a puddle. In such cases reflection instinctively divides the experience into its constituents, the truly known fact and the wrong supposition. Accordingly, if the dualistic statement of experience is reasonably guarded in its terminology against the facile ambiguities of language (*e. g.*, "objective"), it can not rightly be criticized for positing the *same* fact in two orders of reality at once.

It must be acknowledged that the superficial seeming of paradox, as the first fruits of reflection upon dualistic realism, is unavoidable. Just so the hydrostatic paradox retains its oddity in spite of scientific explanation, though this feeling of oddity is understood to be rationally worthless. In our epistemology, if we say that objectivity is a form of consciousness, and that consciousness may even on occasion, or to some extent, "constitute its own objects," it seems superfluous to the degree of actual inconsistency to assert the independent

existence of real objects. Object and objectification, not ordinarily discriminated at all, yet declared radically different in theory, seem paradoxically numerous. The instinct of philosophical parsimony encourages search for some simpler statement. This search, moreover, makes not only for idealism, but also, as frequently appears, for such a modification of realism as will successfully avoid the troublesome dualistic character. The tentative theories called "radical empiricism," "relational realism," "pan-objectivism," and "substitutionalism," all exhibit this motive. Some continue to say that the facts of experience ultimately require the dualistic description, but this is not the point at issue; the latter is the question whether, as is often alleged, the dualistic description is inconsistent. Does the assertion of the independent reality of the object contradict the assertion of the formal objectivity of consciousness? Some specific charges of such inconsistency we have to consider.[4]

A. The use of the phrase "independent of cognition" in characterizing the real object brings to mind a familiar class of criticisms, the prototype of which is ancient.[5] Of these the keenest, as

[4] Some of the criticisms of natural realism find inconsistencies among the various qualities attributed to the independent object rather than between the independence of the object and the forms of cognition. A recent illustration is the argument that "matter is a realm of aspects and these aspects, congenial enough in succession and alternation, will not fit together to form in one total a coherent world. The desk as a light brown total or unit, the desk as a complex combination of drawers and compartments, the desk as a wilderness of woody fiber, the desk, if you will, as a host of ordered molecules or atoms, are different desks, and will in no wise go together. . . . The incompatibility is logical. A continuous polished brown surface *is not* a fibrous or a granulated surface" (Dr. D. S. Miller, in "Essays Philosophical and Psychological," pp. 256, 257). But why must we accept qualitative difference as equivalent to logical incompatibility? And why are two experienced qualities of the "same" object, logically incompatible at the same time, less *logically* incompatible if they occur in succession? Of course to most people any seeming inconsistency, *e. g.*, "smooth" and "granular," only offers a problem for critical qualification and correction.

In this connection I should mention the serious difficulty presented by Professor Strong, namely, that natural realism involves a discrepancy between the real and the apparent temporal location of the object (this JOURNAL, Vol. I., p. 521; "Essays Philosophical and Psychological," pp. 173, 174). I have discussed this point, under the title "The Time Paradox in Perception," in this JOURNAL, Vol. VI., pp. 145–149.

[5] I refer, of course, to the notion that the object is "dependent" on consciousness in that we have no access to it except in perceptual or conceptual experience. The idealistic force of this originally lay in its imputation of paradox to the realistic statement. To exhibit this paradox as an unmistakable contradiction is the conscientious effort of some critics; but usually the contradiction is presumed genuine. Note, for example, Mr. Joachim's insinuation that there is something irreconcilable in saying that "the *same* greenness . . . is *both* in itself and *also* in relation to something else" ("The Nature of

well as one of the most elaborate, is perhaps Professor Royce's discussion of "Independent Beings."[6] Let us observe the line of argument by which the character of independence is resolved into "meaning." After showing that *absolute* independence between object and consciousness is self-contradictory, since it negates the cognitive relation itself, Professor Royce tells us that any assertion of partial or relative independence involves the same *logical* fault. He says: "If the real were wholly independent of knowledge it would be self-contradictory. Well, just so, if *any part* of the reality, if any division of it, if any group of substances or characters in it, were in entire independence of knowledge, or were the same whether known by anybody or not, all our former analyses would apply to just that portion of the universe. . . . If no reality can have entirely independent being, no part of reality can win such being."[7] Now it is decidedly to the advantage of the realist to inquire closely just what this argument proves. A significant feature of it is its implied confusion of "relative independence" with "entire independence of part." But the former is by no means disproved by the logic which demolishes the latter. If it were, we might successfully argue that because it is self-contradictory to say that two things are absolutely alike, therefore we can not say without logical inconsistency that they are partially or relatively alike. But as likeness and unlikeness are real correlative characters, present in widely varying degrees, we may entertain the suspicion that a large measure of relative independence belongs to some realities. This suspicion is reenforced by observing Professor Royce's own conclusions. He continues: "No, the real must be through and through, to its very last quality, to its very inmost *core, such as to be fitted to be known.* . . . Independently of this essential relation to knowledge, being is indefinable. It is there as *that which, if known, is found giving to ideas their validity,* as *that to which ideas ought to correspond,* and as that whose essential relation to ideas is that it is their *model.* . . . To be

Truth," p. 42). On this ground, apparently, one could not say that a book is at the same time a book and a part of a library or the property of its owner. Compare the passage between Professors Strong and McGilvary on this point. "'The realist will surely be kind enough to admit that if we see the independent red, then that red is both in and out of consciousness at the same time.' The realist, even at the risk of seeming unaccommodating, refuses to admit that the real red he is contending for is both in and out of consciousness *at the same time and in the same sense*" (this JOURNAL, Vol. IV., pp. 455, 456). The question whether "to be" means by essential implication "to be experienced," or "to experience," or neither, can not, I suppose, be finally settled by argument, but it is to be hoped that the use of verbal inconsistencies for purposes of philosophic criticism will diminish.

[6] "The World and the Individual," Lecture III., also pp. 195–202.

[7] *Loc. cit.*, p. 201.

real now means, primarily, *to be valid, to be true, to be in essence the standard for ideas.*'' It is to be noted, however, that while these conclusions lead us along a smooth rhetorical road to ''critical rationalism,'' and so toward Professor Royce's magnificent idealism, all that is strictly proved is that the real is essentially ''fitted to be known,'' a proposition with which the natural realist may readily agree. When the subtle transition is made from ''reality'' as ''that to which ideas ought to correspond'' to ''reality'' as the ''model'' for ideas, or from ''that which, if known, is found giving to ideas their validity'' to ''validity'' itself, the ideality of the real is surreptitiously imported into the terms. Strictly speaking, the relative independence of knowledge, attributed to the object by natural realism, remains unresolved into, or displaced by, cognitive relations.

But what is meant by ''relative'' dependence and independence? Certainly nothing esoteric and mysterious. In the kind of fact over which dispute arises relative dependence means simply that the character of being knowable implies knowledge generically, and implies actual knowledge conditionally; *i. e.,* under theoretically conceivable conditions, and only under these, could the fact become known. Properly analyzed, it signifies only that the universe is of such a nature that if certain appropriate changes were to occur, actual cognition of any and every fact would ensue. In this sense all facts are through and through dependent on mind; one aspect of their nature, namely, their ''knowableness'' is correlative with consciousness, and thus qualifies the absolute independence sometimes attributed to them. But such dependence is far from negating all independence whatsoever. As well might we say that because the likeness of two things negates absolute unlikeness, therefore it negates any and all unlikeness. The philosophical process of molding this dependence, or possible objectivity, into ontological idealism is justified neither by analysis of cognition nor by obscurity in the idea of possibility. It must be acknowledged, on the other hand, that the independence of a fact, or its being ''as'' the mind might experience it and whether or not the mind does experience it, is irreducible. But to ask what this ''being'' is, with the presupposition that it is anything but what we find it to be, *i. e.,* in ordinary critical experience, is an initial error. The independence of the real means whatever non-mental character we critically discover in it. The proposition that all ''experienced'' characters *are* ''experience,'' and that facts not experienced by us, *e. g.,* ultra-microscopic and ultra-telescopic facts, must be some experience, remains what it always has been, namely, a philosophic assumption, speculatively proper but neither logically nor empirically intuitive. At least equally sound is the assumption that consciousness is of self and of things which

are not self, that appearances are for the most part realities, and that what we consciously find is found relatively independent of consciousness.[8]

The degree of dependence and independence, *i. e.*, the relative importance of these characters, varies greatly. In the case of undiscovered and unsought facts (a mass in comparison with which human knowledge is infinitesimal) the independence is supreme. Dependent, indeed, such facts are, in the sense of being theoretically knowable; and our very acknowledgment of their reality is, if you please, a vague kind of experience of them. But that such knowableness or such experience impairs the independence attributed to facts by the natural realist is as untrue as the supposed implication of absolute experience is logically fallacious. When, however, facts become necessary to advancing science or useful to civilization, their dependence assumes importance, they are merged in and transcended by experience. The bacillus which is relentlessly sought in uncounted cross sections of tissue is not properly regarded as "essentially" independent of the search; a very real aspect of it is dependent on human purposes.[9] Still other kinds of fact, *e. g.*, ethical and esthetic relations, are well-nigh meaningless except as expressed in terms of consciousness. Something of this varying dependence and independence, which we find in our metaphysical "type phenomena" must be preserved in our final view of reality, and when this is clearly seen the apparent distinction between realism and idealism tends to become blurred.

[8] It is interesting to compare with the idealistic treatment of "independence" Professor Dewey's answer to the question how the reality of past stages of the universe can be assimilated to the pragmatic definition of reality. He says of the remotely past situation, "It is a situation of which, by scientific warrant, it always is to be said that it is on its way to the present situation, that is to 'experience,' and that this way is its own way. . . . So viewed, the question for philosophy reduces itself to this: What is the better index, for philosophy, of reality: its earlier or its later form? The question answers itself: the property or quality of transition-towards, change-in-the-direction-of, which is, to say the least, as objectively real as anything else, *can not* be included in the statement of reality qua earlier, but is only apprehended or realized *in* experience" (this JOURNAL, Vol. III., pp. 253, 255). One may accept this and still believe in the relative independence of the earlier situation, in the sense that this situation was *real*, though scientifically historical experience of it had not yet appeared. One of the very motives which makes the pragmatist disagree with idealism, namely, his sense of the *reality of the part*, points toward acknowledgment of the reality of the ante-conscious parts of the universal process.

[9] One of the classic errors of realism is its supposition that the exclusively "essential" character of reality is independence. This may or may not be so. When a fact is unknown, it is indeed essentially independent of consciousness, but when it is known its dependence is equally essential. The use of the term in any other than this functional sense is apt to prove a philosophic nuisance.

To return to our main theme, the paradox of natural realism which appears in its assertion of both dependence and independence between object and consciousness, is not equivalent to self-contradiction. The kind of dependence, and of independence, are describable in terms which perhaps can not be further simplified, but which are as intelligible as any we possess, and which can not be exhibited as mysterious or inconsistent without (to borrow a phrase from Professor James) "abusing the philosopher's privilege of being puzzle-headed."

B. Paradox appears also in the characters of consciousness called "content," "imagery," "awareness," and "meaning." The difficulty, concisely stated, is that we can not distinguish any "awareness" or "meaning" by itself, and if we identify these with "content," the latter must be admitted as "objective" in a way which either resurrects the "representative theory" or abolishes consciousness altogether. Much recent discussion has turned on this point, the full consideration of which is impossible here since the psychological questions involved are numerous and far-reaching. A tenable position may, however, be stated on the basis of natural realism as follows: "Content," "imagery," "awareness," and "meaning" are different names for the same fact, state, or process of consciousness; no constitutional differences exist corresponding to the variety of terms. "Content" and "imagery" are primarily structural in significance, "awareness" and "meaning" primarily functional. But the fact is the same fact; the "content" *is* the "awareness" and the "meaning." Whether the awareness, in any given case, is correct or illusory, the meaning true or false, is a further question, irrelevant to the one particularly at issue. For our question, it should be remembered, is whether or not consciousness, objective in form and describable both as content and meaning, imagery and awareness, may not consistently be regarded as knowing a real object to which it corresponds. The illusoriness of some apparent awareness does not destroy the genuinness of other awareness; on the other hand it is only in contrast with the latter that the former is "illusory." If we stick persistently to the assertion that "content" is "meaning," and that as such it may know facts to which it psychologically corresponds, the proposition may be paradoxical, but it is not self-contradictory. The difficulties alleged are an elaborate and technical way of stating the objection already considered, *viz.*, that the object is inconsistently located in two orders at once, but it has no superior logical cogency.

A page of correspondence illustrates this point so clearly that it is worth quoting with bracketed comments. A clear-minded friend writes, "You suggest that the quality of the object is identical with

the perceived quality, but is numerically distinct from the perception-quality. My difficulty here is that this states the problem, not the solution. [The natural realist would say rather that this is the best statement of the facts; the "problem" may be artificial, or may be insoluble.] The perception-quality is different from the quality of the object; it is my way of seeing the latter. But the perception-quality is itself object, on this view of consciousness, and so . . . we have the old dualism emerging in a different place, *viz.*, between the object which is perception-quality and the quality of the object. I can't see any essential difference between this dualism and that of Locke. [The trouble here is indeed precisely the same as in the case of Locke's dualism, namely, in the assumption that the perception-quality is itself "object." Locke's theory virtually included two kinds of "object" while officially recognizing only one, *e. g.*, in the definition of knowledge as the perception of agreement and disagreement between *ideas*. If the distinction between real object and formal objectivity is maintained from the start the traditional difficulties disappear. This is half acknowledged in the next sentence.] To be sure, it can be urged that the perception-quality is my way of seeing the quality of the physical object. But the 'how' of it constitutes the difficulty. [Not unless the "how" implies a contradiction.] To my mind the perception-quality will not bear analysis. If the perception is of a blue, it will hardly do to say that the perception-quality signifies a blue perception. [Why not, provided we do not confuse this adjectival use of "blue" with the quality of the sky or silk itself? Again the problem runs back to the primary distinction between the mental and the physical.] And if not that, I can't ascertain what is meant. The consciousness involved has no quality; it is plain awareness and is the same everywhere. Distinctions all belong to objects or contents. How would you get the concept of consciousness to mean more than this, without making consciousness constitute its own object? And of course if we do the latter, we have the original dualism on our hands." [The validity of this dilemma depends upon the implied disjunction: *Either* consciousness is pure awareness *or* it constitutes its own objects. If, however, we admit the distinction between real object and formal objectification, our dualism is not open to the traditional objections. The concept of consciousness would retain all the heterogeneous content which psychology ordinarily attributes to it, and this content could properly be regarded as more or less correctly aware of real objects.]

This matter may be restated in the form of certain suggestions about terminology, suggestions which have force whether or not we are inclined toward natural realism. First, it is certainly desirable

that the use of "content" as identical with "physical fact," or "thing known," should be abandoned. Neither the etymology nor the history of the term unambiguously recommends this usage, and it persistently creates misunderstanding. The word is bound to have a psychical significance, and, if we allow it a physical significance as well, the ambiguity will remain a nuisance. Furthermore, if "content" be regarded as equivalent to known physical fact, "consciousness" tends to become limited simply to "awareness," homogeneous for all cognition. The natural outcome is the view of awareness as "relational" (*i. e.,* between the physical fact and the nervous organism) and thereby we altogether lose "consciousness" in the traditional sense. At present there is insufficient evidence for such a step. "Consciousness as such" with its "content" should be regarded as firmly established in our philosophical vocabulary. Secondly, the use of "object" as denoting a phase, or part, or content of finite consciousness needs to be corrected. To say that the subject-object distinction falls *within* consciousness, if this implies that consciousness creates its objects, is, of course, not universally and unequivocally true, and, as we must acknowledge the distinction between real and spurious objects, we would do wisely to restrict the term to the former. In cases where consciousness is said to "constitute its own objects," *e. g.,* dreams, fancies, memories, and illusions, we should take care, if we retain the term, so to qualify it that it will unambiguously indicate mental facts. In the opinion of the writer, however, this usage of "object" with the exclusively psychical connotation is as unnecessary as it is common. "Projection" would serve every purpose, and its use would avoid a great deal of exasperating ambiguity, as well as the hoary fallacy that the object of consciousness is a state of consciousness. The apparent reality of such "projections" in the moment of experience, *e. g.,* in dreams and illusions, is not sufficient justification for calling them "objects." They can not escape being regarded as "subjective" facts. Thirdly, if this corrected usage were observed, it would be possible psychologically to identify "subject" with consciousness, and to describe conscious subjectivity as psychology empirically describes self-consciousness. Instead of being a "logical presupposition," or the philosophical "rumor of a disappearing soul," the "I" of selfhood could have its unity of facts properly exhibited—for example in the structure and function of "purpose"—and would thereby gain something like scientific status.[10]

[10] No better illustration of the terminological difficulties under which we are laboring could be found than appears in the symposium on "The Nature of Mental Activity" in "The Proceedings of the Aristotelian Society" for 1907–1908. For example, Professor Alexander observes: "Now what makes one thought-process different from another is, I find, nothing but this difference of

C. But even though terms were used in the way here suggested, we would still find ourselves confronted by what is perhaps the most acute form of the paradox, namely, the statement that in part the psychic process of cognition truly knows ("reaches," "grasps," or "reveals") its object, and in part is merely subjective, or, in the terminology indicated above, mere projection. The flood of disagreement with such statement crystallizes in the pointed criticism that we are unable to discriminate introspectively between these two parts of the process, and that to assert a mysterious cognitive power in the percept while we also expressly deny that it is truly cognitive after all, is remarkably like a contradiction. In reply, it may be said, first, that our failure to discriminate at the moment between the true and the false features of the process is not at all a refutation of such a duplex character as shown by reflection. It is utterly unfounded to assume that an immediate criterion of truth and error must exist in the state of consciousness itself. On the other hand, it

mental direction. It is not the object or content of the thought. . . . I have no doubt that the thing called my consciousness exists, and that it is mental activity. But it is not different in quality according as I am conscious of blue, or green, or the sun, or the Pythagorean theorem. . . . All these things are different according as they are color, or figure, or the like, but my consciousness is one and the same thing working only in different directions" (pp. 220, 221). With this compare Professor Read's remark that "Object and subject stand for a distinction within consciousness. . . . To say that the sky is consciousness is a paradox; but to say that the sky as known is not consciousness is a contradiction. Now what is the sky except as it is known? Any object directly known . . . I call either a phenomenon or a representation" (p. 236). "Phenomena and representations, I say, are contents of consciousness" (p. 255). Of course the detachment of these quotations from their context accentuates their uncertainty of meaning, but that the uncertainty is genuinely there is shown only too clearly by Professor Ward's and Professor Stout's criticisms (*e. g.*, p. 244). Natural realism is justified in asserting (1) that the identification of "object" with "psychical phenomenon" inevitably leads to confusion, since linguistic usage inevitably identifies objects with real things which are certainly not psychical phenomena in the familiar psychological use of the term; and (2) the identification of "content" with "real things" can not prevent the surreptitious restoration of "content" to consciousness in the sense of qualitative constituency, since the term has good standing as a psychologically descriptive word.

Professor Taylor deprecates the confusion "caused in philosophical discussion by the unscholarly use of the epistemological term 'object' (which properly signifies 'object of cognition') instead of the more familiar 'thing' to denote the constituent elements of our environment as it is actually experienced in practical life. . . . For practical life the essential character of the environment is not merely that it is 'presented,' but that it interacts with our own purposive activity; it thus consists not of 'objects,' but of 'things'" ("Elements of Metaphysics," p. 45, note). To the writer this confusion seems infinitesimal in comparison with that which the history of philosophy abundantly shows to have followed from efforts to identify "object" with "psychical fact."

is quite as proper to regard truth and falsity as belonging irreducibly to the mental state as it is to accept likeness and difference as irreducible characters of facts. Secondly, there is no contradiction in the statement unless it both affirms and denies truth to belong to the percept in the same part or aspect. This, if we speak precisely, we are careful not to do. Puzzling, indeed, the assertions of natural realism may be, for the facts themselves are puzzling and no theoretical statement can wholly avoid reflecting this character, but self-contradictory they are not.

Natural realism is weak in that it over-emphasizes the perceptive aspects of cognition and fails to do justice to the conceptual, symbolic, functional, purposive, emotional, and volitional aspects. It has a static rather than a dynamic character; it asks "What is the constitution of this experience?" rather than "Why does such a process occur?"[11] It wisely sees, however, that certain acknowledgments about perception are fundamental in a theory of knowledge, and that these are much too easily ignored or slurred over by other theories. Whether it can do justice to the larger aspects of cognitive experience is a far-reaching problem. But in order to preserve its philosophic integrity it need not pretend to be more than a partial account, a foothold for further progress. What it properly asserts is that, as a careful statement of a universal naïve belief, it is empirically satisfactory and logically self-consistent. However commonplace and unesthetic it may be, however unsatisfactory to those who desire the "ultimate meaning of things," in the traditional metaphysical sense, it is not rightly accused of self-contradiction.

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[11] Höffding declares "The static notion of truth must everywhere give way to the dynamic" ("The Problems of Philosophy," p. 84). This antithesis, like so many others in philosophy, seems to imply the mutual exclusiveness and incompatibility of its terms. But is there reason, except in the form of mere verbal suggestion, why truth should not be both static and dynamic? In general, static aspects are as genuine as dynamic aspects, and this is presumably as true in epistemology as in physical science. It is a mistake to suppose that the current tendency to state problems and solutions in dynamic terms escapes the old difficulties. The latter may be temporarily obscured in the fog of new ideas and new terms, but when clearness comes they reappear. It should be regarded as the virtue rather than the vice of realism not to have lost sight of the structural features of cognition.

SOME NEGLECTED PARADOXES OF VISUAL SPACE. I

SEVERAL years ago I was led to ask myself certain questions about the blind spot and the periphery of the visual field. Observations giving at first a most oraeular answer, I thumbed psyehologieal literature for more light, but there even less was shining. Some of the questions nobody seems to have faeed, while others had been disposed of in a manner indicative of haste, prepossessions, or laek of interest. That these attitudes were unwarranted, a study of the blind spot and peripheral phenomena quiekly convineed me. Indeed, unless my observations and those of several persons who have kindly helped me are at fault, they have important bearings upon the theory of eontinuums and upon one's eoneeption of eonseiousness. These bearings will be eonsidered in later artieles. At present, besides stating the faets about visual space at the blind spot and periphery, I shall try to show but one thing: namely, that the paradoxes here given pereeptually are just what one must expect to flow logieally from the hypothesis that the spaee we see is real space itself. If the reader ean discern, in his own visual field, the puzzles I am about to reeount, he will probably agree that the smoothness with whieh they fit into a natural-realistie theory of pereeption is presumptive evidence in favor of the latter.

The eampimeter invoked the first question. With this instrument, we were told, the exaet shape and size of the visual field (monoeular, of eourse) could be eharted. By the usual familiar method I seeured a pieee of paper with an irregular eircle-like line, which was the ungainly contour of the territory my right eye saw. Being sceptieally disposed, I tried to see whether the laboratory artist had drawn true to life; but I tried *by looking at the visual field itself.* In all innoeenee, I reasoned that, as everything I see has some shape and size, and as the visual field is, by definition, the totality of things seen (with one eye) at a given moment, therefore this totality must have a pereeptible shape and size, however vague and wavering. This eertainly rings true to orthodox logie; so it seemed but a matter of a few weeks' praetise before the eampimetrie shape would, so to speak, beeome visible to the naked eye. This natural hope was blasted, though, and in its blasting there were laid bare some paradoxes whieh, for aught I know, have generally eseaped notice.

It will not do first to seek the shape of the field by gazing with one eye at a sheet. Even skilled observers who do this often report the field to be visibly eireular. Some say they see the eurving rim somewhat blaeker than the field just within it, while others deelare the rim is not black but exists as a mere stopping-place, a sort of geometrical line, of no breadth, but yet somehow pereeptible. The

former were easily disposed of. Their black rim proved, by charting, to be the contour of nose and eyebrow seen well within the absolute periphery. When his eye was held in the normal line of vision, such an observer usually confessed that the rim was very hard to see in the temporal arc, where, as it happens, no part of his own face intrudes. The second type of observer proved more difficult; but, as eye movements were generally detected during fixation, the conjecture lay near at hand that the rim "of no visual breadth" meant only the kinesthetic quality of a faint outward circular sweep made in the paradoxical hope of seeing the margin by moving it in a little toward the center of clear vision. A second series of tests showed the truth of this guess. Observers were put in a dark room and spared the difficulty of fixation as well as the confusion of judgment due to the difference in color and sharpness of contour between central and peripheral objects. With the entire field an even black, every verdict agreed that there was no assignable shape, either symmetrical or irregular, clear-cut or hazy. It was not as if the margin were seen through a fog or were itself nebulous. There was no line or band of any sort, no limit at which anybody could say: "Thus far and no farther." I have made the observation hundreds of times and should now word it thus: for me, there is no more *spatial form* here than in a musical chord or a complex odor, but, just as in the chord there is some character which I should naturally call *spatiality.*

Once familiar with this experiment, one may safely resume tests with open eye and investigate my second question, viz., that about the limit of vision at some single point, which is naturally much more easily attended to than the whole fringe. Now let the observer face a white sheet of even illumination and, fixating in the normal line of vision, attend to the outer edge of, say, a black penholder whose tip has been thrust just over into the visual field. I know of no more difficult trick with any sense organ, nor of any which, when once mastered, yields such a peculiar, almost incommunicable, result. There is absolutely no analogy between the disappearance of the penholder and, say, that of a mountain peak into the clouds. However absurd the words sound to the logical ear, it is strictly correct to say that the penholder has absolutely no outer edge, no point which can be seen as the last, none whose next remove is visual nothingness. I am not simply uncertain where the penholder disappears, I am very sure that it is actually "boundless," as genuine and flawless a specimen of τὸ ἄπειρον in real life as Anaximander himself could wish for. Not that I perceive the penholder to go on and on forever; but in another sense, which one must find in his own perceptions in order to understand, and which we shall later investigate, it is extensively indeterminate in a unique manner. What this means, our third problem, the blind spot, will make clearer.

Nobody has made capital of the rather obvious fact that the blind spot is physiologically related to the visual field as the environs of the retina are. Both are insensitive regions organically adjacent to sensitive. The presumption is, then, that one's perception of the limit of vision is essentially the same at the blind spot and at the periphery. So it is, too. Not only do I find the ἄπειρον around the blind spot but, because the retina surrounds the latter, the ἄπειρον here shows more vivid detail than at the periphery. In spite of this, however, psychologists are at odds over the simplest description of the facts and still more fiercely over the interpretation. One group sees the blind spot as a "sehr verwaschener grauer Fleck" in the visual field; another declares it is not an element in the field at all, its region being filled in, as Wundt puts it, through reproduced sensations; and a third, very cautious, agrees with Ebbinghaus that nothing can be said about it, the case being analogous to the instant when we awake from dreamless sleep having no memories with which to fill in the interval and yet being aware that time has passed since we fell asleep. All three opinions state facts, but inexactly. True, if we look at a white field, we may note a diffuse, uncertain effect, which we may tentatively call gray, in the region of the blind spot; but by holding a black thread across the field so as to cut across the blind spot, we find that the gray, so far as it is distinguishable as gray, really fringes the spot itself. Careful attention to it along the path of the guiding thread shows unmistakably that the color is, on the side of the entering optic nerve, absolutely boundless. These words, I know, are absurdly coupled; what is on the side of anything *must*, by the very nature of this lateral relation, have a boundary, protests the logician. But, heedless of this, the paradox adds to its shrieking company a madder one, as soon as we describe the transit of the black thread across the blind spot. The thread disappears on one side of the spot and reappears on the other, *but without a break.* Most emphatically, it is not filled in by Wundt's reproduced sensations; I do not perceive it at all across the blind spot, but am clearly aware that it is invisible there. And yet where it becomes invisible, there is no last visible element.

Ebbinghaus is on the trail of this paradox, but does not quite catch it. His comparison of the blind spot with the "time-blindness" of dreamless sleep certainly suggests but does not precisely depict the situation. In dreamless sleep many organic sensations, too faint or too disorganized to be recalled discretely, doubtless occur, giving us a vague consciousness of lapsed time and so preventing our waking state from joining directly on to the last previous wakeful state, as it does in the case of absolute unconsciousness. The analogue—and Ebbinghaus regards it as nothing better—is unfortunate.

Strictly construed, it would mean either that the visual space elements adjacent to the absolute blind spot sense, in some mysterious way, the presence of an extension which is not itself sensitive; or else that there is in the visual field a genuine hole which vision itself can not fill in but which other varieties of space perception somehow manage to. In the final analysis, this second reading of the analogue simply defers the whole problem, which is that of describing what we actually see; to invoke "reproduced sensations" or auxiliary space-sensing organs is no more helpful here than to appeal to heredity or "local signs" or preestablished harmony. Be the *means* or *causes* of our seeing the visual field as we do what they may, we must still describe the field as it is, would we understand visual space as it is. Only the first sense of the analogue, therefore, claims our attention; but it does not square with facts. No extension is sensed across the blind spot. Near it, I sense extension but no color; and by "no color" I mean "no color," not a phantom gray or any other hazy, will-o'-the-wisp tint, but absolutely no more color or suggestion of color than I sense in a pin prick or a rose's odor. We have provisionally called the effect gray, in deference to custom, but we must now forbid the adjective. It is with respect to color as with peripheral form-perception, whereof Ebbinghaus correctly says, we do not perceive shapes simply in distortion or as through a fog or yet as with inaccurate accommodation, but rather are unable to establish *any* spatial order or even a respectable chaos. And as with color, so finally with extension itself. It does not change its nature near the blind spot or across it; it simply eludes us, as if space itself were slipping from our grasp into some foreign dimension whither no man pursueth.[1]

[1] The paradox of colorless extension is given still more convincingly in the periphery, where, again, the effect is called gray simply because observers assume that, of course, everything one sees *must* have some color. This is not one of the differentiated colors, hence it must be gray—so runs the unconscious logic. The recent studies of peripheral after-images, such as Miss Grace Fernald's (*Psychological Review*, Vol. XV., p. 25), do not conflict with the above observations. They show that after-images appear at the periphery even when the tone of the color stimulus is not seen. By periphery, though, is meant the whole region beyond the paracentral. Thus, if I read the records correctly, an after-image from a red light striking the retina beyond the campimetric red-green zone is considered peripheral; so, too, an after-image from a blue light beyond the blue-yellow zone. I find, however, that the periphery, so defined, has several zones, three of which, in my own case, are easily and always demarcated. At the very rim, color and form are absolutely non-existent, directly or in after-images. In a zone just within this, there is a fluctuation between pure extension and some very uncertain color-form complex. For blue-yellow stimuli, this effect in my own case reaches out very far. The third zone, next to the campimetric blue-yellow field, gives a rather swift fluctuation between fairly clear and vague color-form vision. The paradoxes we are considering

Not long ago, such mysteries would have been dismissed as merely so much more evidence that mental life is neither a piece nor a picture of the physical world order, but an ideal island whence the marooned ego can not even signal to the mainland of reality. Today the wish is abroad to explain their like in a thoroughly realistic way, not to substitute one big obscurity for a dozen little ones. The attempt has not yet been made, I believe; all psychology, even the most materialistic, still speaks the language of idealism, or at least a dialect of it. But a beginning must be made, if psychology is to take its proper rank as a natural science. Now, it is not enough to borrow the methods of realistic research, the subject-matter itself must be realistically interpreted; and not for the sake of proving some realists's philosophy, but in the hope that, from the new point of view, some of the old spectres of psychology will be seen to be but mist.

Suppose we begin by accepting, as a working hypothesis, the natural belief that what is made immediately present to us through the assistance of the retina is real space, not a mere "sign" or "ideal correspondent" of a hypothetical outside space. It would at once follow that the elements of the visual field are not *in* space, for the excellent reason that they *are* space. Obviously, there is no possible sense in saying that a real space is itself in a realler one; one might as well say that a real blue is in a more general blue. Such perversions of the preposition "in" shoot through all philosophical literature, and a generation schooled in them will naturally cry heresy at the above inference. Could there be a more monstrous paradoxical insult to common sense than this allegation that a part of space is not contained in its whole? This misses the point, though. We wish to know just what we mean by "part" and "whole" and "containing," when speaking about extensions. For instance, have we to do here with a receptacle and its contents, or with a cake and a crumb of it, or with a thing and one of its qualities, or with a class and its members (a concept and its individual, differentiated cases)? Certainly, the natural realistic view is not that a real extension is, *as extension*, somehow tucked away in a bigger extension, as a barrel might be in a ship's hold. Mr. Bertrand Russell's distinction between "externality" and "spatial order" is one the ordinary man would insist upon, were he criticized for speaking of things as being "in" space. He means that the things themselves are qualified extensions and that, as extensions, they are related to one another in

have to do with the Ultima Thule of the periphery. To admit their existence here is, by the way, not equivalent to denying that under certain unusual conditions even the ultra-peripheral zone may sense color, at least in after-images. No less than logic, the astonishing adaptive powers of the retina warn us against such an inference.

a manner he describes as position or order. Extension, then, is a quality of some things—most conspicuously of visible things. I know this naïve description will provoke many a learned smile on lips ready to prove space an *a priori* form or a continuum of some mathematical-geometrical sort. But suppose we run, in a spirit of adventure if with no better grace, to the last implications of the innocently radical view. We find them straightening out all our paradoxes and thereby furnishing some little empirical evidence in favor of the realism on which the opinion is founded.

Those who consider visual areas as "in" or "projected into" an external physical area will pronounce our boundless and formless field as an illusion due to inaccurate language, feeble attention, or defective indirect vision. Those who treat each sensed extension as a real cosmic quality, rather than a "sign" or "mental state," must follow us to the point of saying that, even with a divinely perfect organ of vision and imperturable attention, every visual field must be visually boundless and formless because boundaries and forms, to be seen, must be "lines" of difference between seen things. For vision, there can never be anything outside the visual field, inasmuch as the latter is, *by definition,* the totality of characters seen at a given moment. This means that *visually* there is no outside to a visual field, hence no possibility of visual bounds to the latter. A visible boundary between the visible and the invisible is even more absurd than, say, an audible boundary (*i. e.,* an audible difference) between colors and sounds, or, better yet, a felt boundary between feeling and anesthesia. What, then, is the nature of the outermost visual elements? *They must be, in logic, pure extension without spatial order. And this we find them to be in reality.* "Something stretches out" at the periphery, but it is utterly amorphous; so, too, around the blind spot where not even the more highly developed color sensitivity and form-synthesis of adjacent retinal elements can give hue or shape to the "jumping-off place."[2] The extreme homogeneity of these regions is their one striking, baffling character; our inability to "say anything about them,"

[2] Here, to be sure, the zone of pure extension is very much narrower than at the periphery because the retina has developed from its center outward, and also, it may be, because the rods and cones are distributed with a convex front around the blind spot but concavely at the periphery. This second point owes what plausibility it may enjoy to the hypothesis that spatial order depends, in some measure, upon the number of lines that are determined by two rods or cones on opposite sides of the rod or cone whose visual space-order is being measured. The geometry of this assumption, as well as its factual warrant, can not be sketched here. As for the first point, can histology and experimental psychology, between themselves, show any genetic correlation between perceptions of extension, form, and color, and the development of the three major strata of the retina? If so, some radical amendments to current theory would follow.

of which Ebbinghaus complains, is the inevitable result of this, for *here we have to do with a single quality, namely extension, attached to no other, inhering in no object,* hence removed from the ordinary judgment which demands a subject and a predicate (a complex and an inhering or otherwise attached character). Strictly, we can not even say "something stretches out," but only "there is a stretching out."

Suppose, now, we ask our naturally minded friends whether extension and quantity are identical. The answer, I think, will be pretty uniformly negative. Knowing nothing about the interminable wars of geometers and logicians over the preciser definition of these two concepts, an acute but unphilosophical person is disposed to say that, whatever each may be, one is not the other, inasmuch as we can inquire into the quantity of unextended things, such as geometrical points, pure number, complexity, time, happiness, etc. However intimately, therefore, extension and quantity are related, they are distinct and neither is reducible to the other. As a strong band of authorities is ready to defend this natural opinion, we need not be ashamed to follow it in its superficially bewildering implications, the first of which is that, if we can perceive pure extension, divorced from every other character, we shall perceive it as quantitatively indeterminate. And this means neither of uncertain quantity nor of zero quantity (*i. e.,* a visual point), but completely unamenable to the very category of quantity. With one slight qualification, this describes what I find at the blind spot and the periphery. Here is just such a genuine ἄπειρον in its pure state save for a certain positional value which it has; I see it to the right or to the left of objects in the clear field. But we know, by observation and by reasoning, that mere position does not bring our ἄπειρον under the category of quantity. It is well known that movements can be sensed in the periphery where shapes can not.[3] Far from being the paradox some psychologists would make it, though, it only confirms what everybody believes at first thought, namely, that position is not a "dependent phase" of extension or of quantity in the real world and hence need not be in the mental. Pure points have position;

[3] Note that this is not Exner's statement, which Professor Stratton has brought under suspicion (cf. his "Visible Motion and the Space Threshold," *Psychological Review,* Vol. IX., pp. 433 f.). That statement is that motion may be perceived independently of all discrimination of positions. Neither the truth nor falsity of this affects in the least my observation that two extensions, each a boundless and formless character, can be distinguished as to position without their developing thereby any perceptible boundary between them. The paradox of motion in no (assignable) direction (first noticed in tactual space, I believe, by Hall and Donaldson) is so easily fitted into our naturalistic scheme, that we shall not consider it.

indeed, some geometers define them as being nothing save position, hence as constituting a relational order intimately connected with extension and quantity, but wholly distinct from these. Ere this, somebody has been itching to ask: "What of the continuity of visual space, and generally of real space, if all this is true?" The answer is our next duty.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Moral Economy. RALPH BARTON PERRY. New York: Charles Scribner's Sons. 1909. Pp. xvi + 267. $1.25.

Professor Perry's little book is notable out of proportion to its size and pretensions. It is the most recent expression of the new spirit in ethics, which aims to get away from historic concepts and controversies back to the facts themselves of the moral life. Bishop Butler's saying is aptly taken as the motto of the book: "Things and actions are what they are, and the consequences of them will be what they will be; why then should we desire to be deceived?" The author's aim throughout is to exhibit morality as neither "a mystery nor a convention, but simply an observance of the laws of provident living," a rational meeting of the facts of life. For him, as for Socrates and the Greeks, moral conduct is enlightened conduct, the good man is the wise man. It is this naturalness and sanity of morality which he is concerned to emphasize in contrast to the Nietzschean view of it as artificial and restrictive, and this purpose he carries out with a singular simplicity and clearness of style and with a wealth of literary allusion which makes the book remarkable as an attractive and persuasive treatment of ethics. Although the work is called in some advertisements of it a text-book, the classification is hardly fitting, lacking as it does all the necessary machinery of paragraphing and bibliography: it is rather "a preliminary sketch of a system of ethics" adapted to all whom recent literature or social change has interested in the problem of rational living.

The topics discussed are essentially those of the usual text-book, though disguised under terms appropriate to the style of treatment: "Morality as the Organization of Life," "The Logic of the Moral Appeal," "The Order of Virtue," "The Moral Test of Progress," "Moral Criticism of Fine Art," "The Moral Justification of Religion." The author's standpoint might, perhaps, be characterized as that of naturalistic idealism or Græco-scientific idealism, combining as it does the Greek conception of morality as the natural flower of human life with the modern evolutionary account of its origin and process. Starting with the conception of the unit of life as the simple interest, or self-maintaining process, the condition for the moral life is found in the multiplication of interests which makes necessary their organization or economy. Goodness is relative to interest and consists in the satisfaction of the process or in the means

thereto. Moral goodness or virtue consists in "the fulfillment of an organization of interests." "Morality is only the method of carrying on the affair of life beyond a certain point of complexity," it is "the massing of interests against a reluctant cosmos." "Morality in its springs is absolutely one with that clinging to life which is the most deep-lying of all interests, and with that relish for life in which its goodness needs no philosopher's approval." The success of the author's exposition of the naturalness of the moral life is beyond doubt, but one may well question if he has not, in his zeal, lost sight of its morality. Throughout the whole of his chapter on the nature of goodness one looks in vain for any suggestion of the essential place of the personal attitude in morality: a machine might be a saint were it only complex enough in its reactions.

The same over-statement of naturalism is found in the chapter on obligation in spite of the great excellence of much of the treatment. The individual seeks the satisfaction of his interests, or the good. These interests are not desires for pleasure, but for objects as diverse as human natures are different. The rational, or moral, individual seeks to satisfy the greatest number of these interests without reference to whether they are now felt by him or are only potential, those of his wider vision either of himself or others. From the point of view of reason, our neighbor's interests are as important as our own future or present ones, the sole consideration being the conservation of the greatest number of interests without distinction of quality. For the author, as for Bentham, pushpin is as good as poetry save in so far as the cultivation of poetry may be a more inclusive aim which includes pushpin and adds other goods as well. The simple interest is an absolute unit and moral deliberation is only a problem in arithmetic, every interest to count for one and none for more than one. Apple pie is better than apples because it satisfies the desire for apples and also for crust, contains more of some simple unit of goodness than do its simpler constituents. In spite of his protest against abstractions one feels that Professor Perry has ventured far into hypothetical psychology in his reduction of moral choice to a calculation of the number of simple units of goodness contained in an act, especially in view of his recognition of the qualitative diversity of those interests, the satisfaction of any one of which constitutes a unit of goodness. A course of conduct which is chosen in view of several more or less conflicting interests and which may be said to conserve them as far as possible, is not merely the sum of those simpler actions, nor is the goodness of the complex act merely the sum of the goodness of the so-called constituents. The statement that *more* goodness is realized in the act adds nothing to the statement that this act is deliberately chosen. The use of the quantitative formula renders ethics no more exact as a science and serves rather to confuse its methods.

The justification of altruism could not be better stated than in the author's discussion of the objective validity of interests, in which he distinguishes between *prudence* as the far-sighted satisfaction of a given interest and *moral purpose* as the adoption of interests for their own sake. It is the familiar Kantian distinction, but it is expressed with remarkable

simplicity and force. Not so clear or convincing, however, is the discussion of the virtues, upon his classification of which, it is true, the author does not wish us to lay too much stress. But surely it is confusing to identify materialism with "the undue assertion of the present interest" and formalism with "the improvident exaggeration of ulterior motives," as well as to make the distinction between the material and formal aspects of morality coincide with that between a regard for a nearer and a more remote good. It is apparently the same naturalistic tendency to ignore the subjective or personal factor that finds expression in the assertion that "in terms of intelligence and incapacity, the basal excellence and the basal fault, it is possible to define the whole affair of which morality is the constructive phase." And again, "manufacturing, transportation, and banking, when conducted on a large scale, touch life at so many points, that he who seeks to gain power or wealth by means of them will gradually and without any abrupt change of motive approximate the method of disinterested service." This is truly an application of the quantitative measure of goodness which should be comforting in this age of large undertakings. The distinction of good and bad is only one of more or less.

In the last two chapters on art and religion the idealistic note predominates. Two quotations must suffice as expressive of the author's position. "It will have become plain that while art is the natural and powerful ally of morality, it does not itself provide any guarantee of proper control; in the interests of goodness, no man can surrender himself to it utterly. Goodness can not be cast upon a man like a spell; it is a work of rational organization, and can not be had without discipline, efficiency, and service." Religion in its highest phase is identified with moral idealism. "This idealism establishes itself upon an unequivocal acceptance of moral truth. It calls good good and evil evil, with all the finality which attaches to the human experience of these things, leaving no room for compromise. Its faith lies in the expectation that the world shall become good through the elimination of evil; it manifests itself in the resolution to hasten that time. . . . Life is not a spiritual exercise the results of which are discounted in advance; but is actually creative, fashioning and perfecting a good that has never been."

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Les Systèmes logiques et la logistique. C. LUCAS DE PESLOÜAN. Paris: Marcel Rivière. 1909. Pp. 416.

M. de Pesloüan does not like logistic, but he does like Pascal, and so he becomes a critic of logistic in the spirit of Pascal, half admitting "it is not shocking for the reasons found afterward, but the reasons are found only because it is shocking." The first expression of this dislike was four letters published in the *Revue de Philosophie* for 1908, of which the first three were reviewed in this JOURNAL (Vol. V., pp. 21–23). The fourth deals with the confusions into which logisticians have fallen as a result of the Cantorian paradoxes; their willingness to dispense with the principle of contradiction, the concept of class, etc., and concludes with a criticism of

logistic's claim to practical utility. To these letters which form the nucleus of the book (pp. 122–277) is added a preface (pp. 1–121), and an appendix (pp. 288–413).

The preface is non-technical and of absorbing interest from the point of view of both style and content, for the author has much humanity of thought and brilliancy of expression. There is, first, an investigation of the claims of mathematics on our attention. This claim lies in its *art, i. e.,* its perfection in form and in power of communicating thought, but this is rooted in our feeling for precision, which is, unconsciously, the inspiration of all mathematical creation. Logistic has nothing to do with intuition or feeling, and can, therefore, be nothing but repulsive to M. de Pesloüan. Its substitution of basal laws and imageless thought destroys the liberty which mathematics has always enjoyed as a birthright and is "an action of the police: M. Couturat being the prefect."

The right of criticism to break into the mathematical field comes from the need of mathematicians to extend their opinions beyond the realm of mere facts. All such extensions are metaphysical (p. 17), and the tacit recognition of the entrance of mathematics into the field of metaphysics appears in the substitution of *hypotheses* for *axioms.*

Logistic can lead to no great discoveries, as logistic, for intuition is the chief factor in discovery. The limitation of its rôle is, in so far forth, absurd. Logistic is not even valuable as a critical method, for it substitutes mechanical parts for the organs of a living being and expects to make the patient live (cf. pp. 72–73). The name *logistic* itself is not a *resurrection,* but a *surrection,* for it is an almost wholly disused word revived in an entirely new and useless meaning: "Now the true word is found; we ought to believe it will be universally adopted; then there will be logistical politics, logistical socialism, logistical economics, logistical history, logistical languages, as we have logistic itself. . . ."

"Provided that God lends it life."

The fundamental postulate on which the claim of logistic rests, our author thinks, is that at a certain point in our knowledge we can throw away all experience and all previous knowledge, substitute a set of postulates, and recreate rationally a system of knowledge which shall exactly agree with previous knowledge (p. 93). This is what is essentially shocking to him and is what he repudiates. There is a splendid description of the logistician's attempts to reject criticism by retreating behind the character of logistic as a language which can only be criticized in terms of itself, *i. e.,* by more logistic (p. 95), and the chapter closes with an example from M. Tannery of a logical construction of mathematics which satisfies that "taste for precision and evidence" which is "the life of logic" (pp. 114–115), but which is not logistic.

The appendices are more technical, for the most part expositions and citations of the works of such men as Du Bois Reymond, Robin, Fourrier, and Weierstrass, and furnish a deeper empirical basis that justifies the more light-spirited criticism which without them might seem flippant and unconvincing.

The postulate taken as the basis of logistic places it as an adherent

of a monistic and deterministic philosophy and, as such, it should commend itself to certain philosophers. Also it seems as if our author had been a little violent against logistic as a critical device. That science should ultimately rest in a logistical form seems improbable and highly undesirable, but that scientists should occasionally try to regard their present achievements as done into deductive form for critical clearing up and self-examination is not the same thing, and seems to the reviewer, desirable. As a special and untranslatable language, it would be hard to make out any case for logistic. Sets of substitutive symbols, like those of mathematics, are practically limited in value to situations having but a small finite number of essentially different and clearly definable entities and relations, and inasmuch as most sciences are not of this nature, it is doubtful whether the use of logistical symbolism could be widespread, and unless it be simplified beyond the recent utterances of the *Formulaire* and of Mr. Russell,

"May God not lend it life"—even in mathematics!

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Nursing the Insane. CLARA BARRUS, M.D. New York: The Macmillan Co. 1908. Pp. 409.

To those who know from experience how difficult it is to make a complex subject clear to the average mind, Dr. Barrus will seem to have accomplished a work of excellence. Her book, which started as a collection of familiar talks to nurses in charge of mental invalids, is the outgrowth of fifteen years's experience in a large hospital for the insane. Its aim is to furnish special instruction and suggestions to students engaged in caring for the insane, to help new workers to a right beginning, and to aid the more experienced ones to greater efficiency. It is truly a most pleasing commentary upon the present state and aims of mental medicine to find a book of this description issuing from the press with the imprimatur of a great hospital for the insane. Not so many years ago our hospitals for the insane were places for the mere detention and custody of their inmates. To-day all this is changed; and not the least important factor in the general advance has been, and is, a greater care and skill in nursing.

Within the twenty-six chapters of her book, the author has given a large amount of information which every good nurse should, in some manner and degree, possess. There are practical talks upon the reception of patients, the hygiene of the wards and of hospital departments, the care of bed patients, bathing and hydrotherapy, the preparation and serving of food, accidents and emergencies, the occupation and amusement of patients, the power of habit, applied psychology, mental hygiene, and several others. Each of these topics is discussed with sufficient fullness for all practical purposes and in such fashion as to render even the description of a wet pack not uninteresting.

It has always been the opinion of the reviewer that a book on nursing should be written by a woman; and since reading Dr. Barrus's volume he

ventures to think that this opinion needs no defence. Her mind is distinctly feminine in the best sense. Here and there one comes across such agreeable bits of writing as this: "Be on the alert for fresh arrivals in the birds, catch their first calls in the spring, attend to the brown earth as it begins to be pierced with all manner of green things that unfold from day to day, let your glances flit about with the butterflies that hover near, learn to be stirred by the promise of awakening spring, exult in the radiance and beauty of summer, bask in the mellow fulfillment of autumn, and respond with briskness and vigor to the challenging forces of winter, and so become at one with nature in all her changing aspects. When you are yourselves alive to these things, you can not help making your patients keenly aware of them also, and you will put your wits to work to see what each walk can bring of pleasure and stimulation to your patients." "Curious words for a book on nursing!" some may say. Perhaps. But for us they contain the notes of sincerity, and of high seriousness, without which no nurse can be wholly worthy of her calling. A nurse who cultivates such a spirit can not go very far wrong in her treatment of the insane, and for this reason, if for no other, we can not too heartily commend Dr. Barrus's book to the attention of those for whom it was written.

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JOURNALS AND NEW BOOKS

ZEITSCHRIFT FÜR PSYCHOLOGIE. September, 1909. *Über das Zusammenwirken verschiedenen Sinnesgebiete bei Gedächtnisleistungen* (pp. 257–360): ALFRED VON SYBEL. – An extended experimental investigation of memory type, speed of reading, individual differences in methods of learning, and the cooperation of visual, auditory, and kinesthetic sensations, with respect to economy and retentiveness in memorizing nonsense syllables and poetry. Discussion of literature and detailed summary. *Über die bei Durchgangsbeobachtungen auftretende Denzimalgleichung* (pp. 361–367): F. M. URBAN. – The different frequencies of various numerals in long series of passage observations in astronomy arise from constant errors which appear in laboratory experiments on the estimation of intervals and in the complication experiment. They also confirm the location of the "indifference point" at 0.6 second. *Reviews:* Moskiewicz, *Einführung in die Psychologie:* A. DYROFF. Polowzow, *Kausalgesetz und Erfahrung:* PH. FRANK. V. Aster, *The Physical Basis of Mind:* CHAS. MERCIER. Autoreferat, *Weiter Mitteilungen über Neurobiotaxis:* C. U. ARIËNS KAPPERS. E. Laqueur, *Lehrbuch der Physiologie des Menschen:* R. TIGERSTEDT. Giessler, *Bijdrage tot de kennis der Rechts—en Linkshaudigkeit van de onderste ledematen:* M. C. SCHUYTEN. Nagel, *Über den Bau und die Bedeutung der Area centralis des Menschen:* G. FRITSCH. Max Meyer, *The Hearing of Primitive Peoples:* F. G. BRUNER. Laqueur, *Zur Physiologie der Cortischen Membran:* A. KREIDL u. J. YANOSE. Max Meyer, *Combination Tones and Other Related Auditory Phenomena:* J. PETERSON. Voss, *Über*

die Einfluss von Audsrucksbewegungen auf das Electrolytische Potential und die Leitfähigkeit der Menschlichen Haut: A. KNAUER. Dürr, *Über den Austieg der Druckemfindung:* G. F. ARPS. Laqueur, *Zur Deutung der nach Exstirpation des Ohrlabyrinthes auftretenden Störungen:* W. TRENDELENBURG. Laqueur, *Vergleichende Untersuchungen zur Physiologie des Ohrlabyrinthes der Reptilien:* W. TRENDELENBURG U. A. KÜHN. Aall, *Uppmärksamhetrus Problem inom den Nyare psykologien:* B. HAMMER. Dürr, *Untersuchungen über den Verlauf der Aufmerksamkeit bei einfachen und mehrfachen Riezen:* O. KLEMM. Dürr, *Der Verlauf der Aufmerksamkeit bei Rhythmischen Reizen:* G. F. ARPS U. O. KLEMM. Katz, *Das Gedächtnis:* TH. ZIEHEN. Kastil, *Untersuchungen zum Problem der Evidenz der Inneren Wahrnehmung:* H. BERGMANN. Bobertag, *Le développement de l'intelligence chez les enfants:* A. BINET ET TH. SIMON. Groethuysen, *Les problèmes actuel de l'instinct:* H. PIERON. Voss, *Grundriss der psychiatrischen Diagnostik nebst einem Anhang enthaltend die für den Psychiater wichtigsten Gezetzesbestimmungen und eine Übersicht der gebräuchlichsten Schlafnuttel:* J. RAECKE. Allers, *Das Krankheitsbild der überwertigen und die chronische Paranoia:* MAX LOEWY. Allers, *Über Hypochondrie und ihre Wurzeln:* MAX LOEWY. Voss, *Über umschriebene Defekte bei Idioten und Normalen:* M. REICHARDT. Moskiewicz, *Characterbildung:* TH. ELSENHAUS.

THE INTERNATIONAL JOURNAL OF ETHICS. July, 1909. *Moral Education: the Task of the Teacher* (pp. 399–418): J. S. MACKENZIE.–Direct moral instruction need not arouse contrary suggestion. Morals can be taught without appeal to supernatural sanctions. The religious aspiration latent in morality appeals only to mature minds and may be omitted from elementary moral instruction. The association of morals and religion through the idea of goodness may be instilled in the study of literature and history. *Moral Education: the Training of the Teacher* (pp. 419–426): MILLICENT MACKENZIE. – The demand for teachers specially trained to give direct moral instruction should be created by agitation. Such special training should be given by teachers's colleges in their regular curriculum and through extension courses. *Some Criticisms of the Nietzsche Revival* (pp. 427–442): HERBERT L. STEWART. – Nietzsche's preaching of the superman inconsistently assumes obligation: his assertion of the mercenary nature of a desire for immortality is unfounded: his supposed evolutionary basis of egoism is a mistake. *Problems of Marriage and Divorce* (pp. 443–465): ANNA GARLIN SPENCER. – Marriage is a free and private contract, but also a social arrangement, and the old social control should persist in forms suited to modern conditions. *Women as Citizens* (pp. 466–476): MARY GILLILAND HUSBAND. – Women can produce a noble race of citizens only as themselves citizens. Human, rather than mere physical, motherhood is the ideal. *The Right to Property* (pp. 477–487): FRANK SARGENT HOFFMAN. – The ground of property is labor, but the right is a state right; hence the state should own all natural sources of property and should control methods of acquisition,

use, and transfer of property. National revenues should be derived chiefly from inherited wealth. *The Ethical Element in Wit and Humor* (pp. 488–494): BRADLEY GILMAN. – This element is the conquest of an error—usually bolstered into pretentious strength by plausible surroundings—by the truth as established in the mind of the listener or spectator through past experience. *Book Reviews:* Munsterberg, *Philosophie der Werte:* G. E. MOORE. Frederic Harrison, *National and Social Problems:* MARY G. HUSBAND. Frederic Harrison, *Realities and Ideals:* MARY G. HUSBAND. Royce, *The Philosophy of Loyalty:* D. S. MUZZEY. A. C. Pigou. *The Problem of Theism:* DAVID PHILLIPS. McDougall, *Introduction to Social Psychology:* FRANK GRANGER. Russell Lowell Jones, *International Arbitration:* G. C. RANKIN. M. W. Keatinge, *Suggestion in Education:* C. BIRCHENOUGH.

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NOTES AND NEWS

IN view of the present scepticism and disbelief in regard to the atomic theory of physical science, it is of interest to note the vigorous assertion by Professor Rutherford, in his recent presidential address before the Mathematical and Physical Section of the British Association for the Advancement of Science, that the atomic theory is not disproved or damaged by the possibility of breaking up the atom into more elementary units, but rather is upheld and confirmed by the discovery of the ions and electrons of the electric theory of matter. Professor Rutherford's statement is, in part, as follows. "There has been a tendency in some quarters to suppose that the development of physics in recent years has cast doubt on the validity of the atomic theory of matter. This view is quite erroneous, for it will be clear from the evidence already discussed that the recent discoveries have not only greatly strengthened the evidence in support of the theory, but have given an almost direct and convincing proof of its correctness. The chemical atom as a definite unit in the subdivision of matter is now fixed in an impregnable position in science. Leaving out of account considerations of etymology, the atom in chemistry has long been considered to refer only to the smallest unit of matter that enters

into ordinary chemical combination. There is no assumption made that the atom itself is indestructible and eternal, or that methods may not ultimately be found for its subdivision into still more elementary units. The advent of the electron has shown that the atom is not the unit of smallest mass of which we have cognizance, while the study of radioactive bodies has shown that the atoms of a few elements of high atomic weight are not permanently stable, but break up spontaneously with the appearance of new types of matter. These advances in knowledge do not in any way invalidate the position of the chemical atom, but rather indicate its great importance as a subdivision of matter whose properties should be exhaustively studied. . . . The idea that the atoms of the elements may be complex structures, made up either of lighter atoms, or of the atoms of some fundamental substance, has long been familiar to science. So far, no direct evidence has been obtained of the possibility of building up an atom of higher atomic weight from one of lower atomic weight, but in the case of the radioactive substances we have decisive and definite evidence that certain elements show the converse process of disintegration. It may be significant that this process has only been observed in the atoms of highest atomic weights, like those of uranium, thorium, and radium. With the exception possibly of potassium, there is no reliable evidence that a similar process takes place in other elements. The transformation of the atom of a radioactive substance appears to result from an atomic explosion of great intensity in which a part of the atom is expelled with great speed."

THE American Philosophical Association will hold its ninth annual meeting at Yale University, New Haven, Conn., on December 27, 28, and 29, 1909. Professor Frank Thilly, the Secretary of the Association, requests that members intending to take part in the program notify him at an early date of the titles of their papers, and send summaries of them, one copy to serve as a basis for discussion and another to be used for publication in the "Report of the Proceedings." Members are also requested to suggest topics for the general discussion.

THE Catholic Institute of Paris invites competition for the Hughes prize, on the following subject: "The laws of nature, their degree of certitude, and of contingency." Papers should reach the Secréteriat of the Catholic Institute, 74 rue de Vangirard, before March 1, 1911.

A MONUMENT has been erected to the memory of Gabriel Tarde at Sareat, his native town. The sons of M. Tarde have published, in connection with the event, a volume of extracts for which M. Bergson has written a preface.

ANNOUNCEMENT is made of the death, on September 17, of Dr. Max Heinze, professor in philosophy at the University of Leipzig. Professor Heinze is well known for his important publications on the history of philosophy.

THE following remark is taken from *The Evening Post* for Thursday, October 21: "Eskimos would seem to have a strong natural leaning towards pragmatism."

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PSYCHOLOGY AND SCIENTIFIC METHODS

SPACE

SPACE has seemed to many thinkers an easier category than time or causality. Personally, I regard it as more difficult to handle than either of these other categories. Not only is it intimately bound up with these, but it is also, so to phrase it, the key to substance.

There are two ways of approach to space as to the other categories, the empirical and the ontological or metaphysical. The empirical study is a necessary preliminary to the metaphysical. It sharpens the vision and sets the problem. Without it, the thinker who attacks ultimate questions can only grope in darkness. I shall presuppose, accordingly, in the following analysis that the reader is able to distinguish between perceptual, normal empirical, and mathematical space, and knows somewhat of their genetic and logical nature.

Is reality spatial? This question has interested me vitally for a considerable time. The reason for this interest is not far to seek. If reality is spatial how can we place consciousness in it? Is such a location of consciousness in a spatial universe possible as will avoid dualism and do justice to the *motives* lying back of the double aspect theory of the relation of mind and body without the acceptance of that theory itself? Can we settle consciousness in a spatial universe clearly and definitely without giving it more nor less than its due?

But I may be accused of using an ambiguous term without definition. What is this reality concerning which I inquire whether it is spatial or not? I do not hesitate to answer—however materialistic it may sound—that reality for me is nature, and consists of such things as I can handle or affect indirectly through machines, be they dynamos or levers. But, while I am a naturalist, I am not so sure of the entire nature of this nature as are the materialists and energists. If I can settle consciousness inside as a *constituent* of certain highly organized parts of nature—while *not coextensive* with those parts, as

the double-aspect theory would have it—I may be able to pave the way for peace between these factions. Nature is, then, for me the ultimate term; but I am convinced that she has been eviscerated by materialists and enervated by idealists. Theory has never done justice in a critical way to her inwardness, to her volume-continuity and activity and content, so to speak; mechanics universalizes surface analogies.

Is nature spatial? Science asserts that it is. Everywhere in physics are calculations which deal with distance, and astronomy produces magnitudes which astonish the imagination. Is philosophy able to agree with science on this point, or is it forced by its analysis to deny what seems so apparent to common sense when it looks from the mountain top, or crosses the ocean, or digs a ditch, and to science when it calculates the return of a comet two hundred years hence?

Philosophy has met the weighty arguments of science and common sense in two main ways. It has either made the distinction between phenomena which are spatial and reality which is not, or it has maintained that reality is experience.

Those who assert that reality is experience are divided into two main camps, the absolutists and the empiricists. The first are definitely opposed to the spatial character of reality. (Taylor and Bradley have taken a definite position against space.) The second party have not as yet clearly expressed themselves. Certainly, however, some thing-experiences are spatial in character even though they lack stability and vanish like gossamer threads. My purpose, however, is not critical, but constructive. I wish to present a view which may withstand criticism. Accordingly, I leave idealism to satisfy those whom it can satisfy.

The typically Kantian position, which was referred to above, seems to me, in its doctrine regarding space, to be an inadequately justified assumption. The fact that our thing-experiences, whether at the perceptual or completely categorized level, are spatial does not imply that nature apart from our experience—for Kant, the noumenal world—is not also spatial. Experiential space may correspond to the spatial character of nature as she exists independently of the individual's experience. What is necessary is a critical study of what we should mean by space if this were so. The "Transcendental Æsthetic" does not disprove such a position; it does not even concern itself with anything but the most naïve realism in regard to space, which, of course, it easily conquers. If, then, one could prove that the things he handles, and measures, and superposes upon one another have an existence independent of his thing-experiences which correspond to them, no adequate reason for denying spatiality to nature in herself would remain. Things in nature, as a macrocosm which

includes our body, do exclude one another. All our methods of automatic registration and measurement indicate this. Only an unconquerable logical contradiction, accordingly, would give us the *right* to be sceptical.

But it may be replied that, in the "Dialectic," Kant has advanced an argument against the spatial character of reality. I do not read it so. It seems to me, again, only directed against naïve realism, the belief that the world of our construction exists by itself. Even if the antinomy stands under modern mathematical definition, this is all it could prove. It is really only supplementary to the "Æsthetic" and is powerless to affect the argument for the spatial character of reality as existent independently of our construction.

Can the spatial character of reality be indicated apart from all questions of finite and of infinite? I think so; I even regard it as a mistake to suppose that this problem of the finiteness or infinity of our universe has any bearing upon whether or not reality is actually spatial. Rather, if we believe that nature, as a construction, must always take its departure from the body, as a part of nature as reality, the reason why this antinomy arises is clear. Its basis is essentially motor. We have found no limit to our advance by proxy, *i. e.*, by telescope and calculation. The mathematical infinite, as variable, portrays this progress in experience. The mathematical infinite is an instrument, not a reality, and is intimately bound up with number analysis, and has only an indirect connection with physical space—a connection which, as Poincaré has pointed out in the case of continuity, has had, however, a healthy influence.

Another logical difficulty has had a baleful effect upon our problem. It is here that the empirical study to which I referred at the beginning is as a lamp to our feet. It shows us that space is neither a receptacle nor a thing, but that in nature things are experienced, and thought of, as extended and in dynamic relation one with another. Extension has here a basis in measurement, and has grown in importance with the need felt for exact measurement. Instruments and standards rather than mathematical conception give us the meaning of "extended" in nature. That this was true from the first the history of mathematics evidences.[1] We are now prepared for the logical difficulty. If things, as parts of reality, are extended, do they possess extension as an attribute? I reply that *in reality there are no attributes.* To think of reality in this fashion is to carry over a logical realism uncritically, as did Descartes and Spinoza. The division into subject and qualities, or attributes, is of value in reflective analysis in experience, but even in non-reflective situations this dichotomy lapses. This is not the place for the de-

[1] *Vide*, Mach, "Space and Geometry."

tailed study of this reflective instrument. I content myself with saying that there is no necessity to transfer a subject-substance and inherent attributes into reality and much reason against such fatuity. But because reality does not possess attributes, it is not, therefore, wrong to analyze nature and to think of it in certain diverse ways. Only he who has a false idea of the rapport, or correspondence, of our individual experience and nature as macrocosm, could assert this. To conclude, things are extended, but extension is not an attribute.

If, then, reality is extended how shall we best understand this extension? Certainly not as geometrical space which is attained only by abstraction and idealization. This is not, however, to deny the utility of mathematics in science. Rather is it along the line of activity and organization that we must proceed. But in this region scientific experiment alone can give our idea clear definition. The meanings which go to make our idea of the voluminous character of nature are at once seen to be many. All the so-called primary qualities enter together. Things are relatively impenetrable, relatively solid, and relatively hard. It is not from isolated particular sensations that these meanings are gathered, but rather from experience of the reaction of different things on one another. Physics in its study of comparative densities, tenacities, hardnesses, and physical chemistry in its examination of the effect of temperature and pressure, are the complex grounds on which we judge. Certainly I do not wish to objectify a pressure sensation or a motor sensation, but that things cut one another or melt, or exclude, one another is as evident as that my body moves. It is not these facts that need to be overturned, but a false logic and theory of knowledge. The "substance-attributes" method of approach to reality, which for Berkeley formed the basis of any naturalistic realism and in conquering which he thought he had destroyed this latter, is not the true basis. Reality does not possess attributes which our ideas resemble.[2]

Evidently I have supported all that science could demand of

[2] Not resemblance, but tested correspondence which always has a motor basis, is the characteristic of ontological truth. I use the term ontological truth to characterize the rapport of our ideas with nature as reality, and empirical truth to indicate a relation within experience itself between ideas and perceptual experiences or other ideas. It is the confusion of these two kinds of truth that leads us to carry over uncritically the idea of resemblance which often holds in empirical truth to this other field. This paralogism is hard to conquer, so natural to us is uncritical realism. It is impossible to develop this distinction and its implications in this place, for it would carry us too far afield. We can at least affirm that the tested structure and activities of things in our experience correspond to, and are hence symbolic of, the structure and activities of things in reality.

metaphysics as a basis for its postulates. Science, yes; but not materialism. All this holds of the brain also as a part of nature; is consciousness therefore excluded?

In order to give the answer to this basal problem its proper setting, a digression is necessary. While there is no need to enter here in detail into the development of a critical attitude towards our experience, certain distinctions which have grown up must be noted. It is the misunderstanding of these distinctions that has led to the exclusion of consciousness from nature and hence to the belief in an ultimate and unconquerable dualism.

Before criticism enters into experience in any organized fashion common sense holds sway. Its view may be called natural realism. Things are regarded, *not as experiences, but as experienced.* This world of things, or nature, gradually had certain meanings assigned to it which have been carried farther and with greater exactitude and penetration by science. All these meanings are, I believe, necessary, inevitable, and correct, and stand for, and arise from, the nature of reality and of our position therein. But the theoretical interpretation of them has not been right. For our purpose the meaning which interests us most is that of independence, for existence, of the experiencer's mind. This independence of mind, which was a *theory-of-knowledge independence,* meeting the soul-body dualism, which had developed largely from different motives, was confused with it. A subject-object, or, better still, a mind-object, dualism linked itself with an entirely different, supposed soul-body dualism. This confusion was aided by the development of psychology, whose view-point, being that of a special science, supported rather than destroyed this fateful identification. To sum up: we have, as a result of this movement, the independence of nature of the individual's experiencing interpreted as an exclusion by nature of mind, *i. e.,* a supposed epistemological independence interpreted as an existential exclusion.

Now logical theory has attacked the epistemological dualism and made a duality of it, *i. e.,* a working, useful and inevitable distinction in the individual's mind. But psychology, holding still to the science point of view, makes the mind run, as it were, alongside a world of objects which it somehow knows but can not penetrate. Sometimes psychology has, indeed, been idealistic, but this was when its own conclusions weighed too heavily on its conscience. How can we satisfy the realistic feeling of science and common sense and, at the same time, the demands of logic? Let me not be ashamed of the faith that is in me. I say without hesitation, that only critical realism can do this. Thing-experiences are in my mind but the things as parts of reality, which correspond to these thing-experi-

ences, are not in my mind. *This exclusion is not based on the original theory which led to the exclusion of mind as such from nature.* My mind is excluded from the other parts of reality simply because it is found to be connected with only one thing, *viz.*, my body. When this logical and metaphysical analysis is once grasped, the epistemological dualism which led to the exclusion of mind from nature is seen to lapse. Let me put this analysis in a slightly different form in order to make sure that I am understood even if not agreed with. In reflection, an inevitable distinction arises between that which is accepted as a background and framework and that which is in process of testing and evaluation. When reflection is centered on nature, on perceived things, this framework is very stable. The resulting dichotomy, expressed in popular thought as that between things and ideas, has overflowed its limits and made of this distinction the ultimate existential dualism of science and common sense. Thoughts, feelings, and ideas were classified as mind, and looked upon as outside things which were spatial and different from it. How natural this was! But this is now seen to be the exclusion of one functional type of experience from another type. Gradually psychology drew *sensation?* also into this realm of mind, and the tortuous riddles of an insoluble, because wrongly based, epistemology had birth.

As a result of our whole analysis we have thus far achieved two main conclusions. Reality or nature is extended, organized, and active, and consciousness is not excluded from it, is not alien to it, but consciousness does not float free in nature as a ship without moorings. Physiology and psychology, normal and abnormal, indicate that it is born and dies with every pulse of attention. Is it necessary to repeat the arguments for this location of the individual's consciousness? I think not. Every thinker is, or should be, familiar with them.

Things in reality, although in dynamic continuity, exclude one another, but consciousness, the flow of experiencing, is not a stuff nor a thing alongside other things. It is a *variant* in the changes occurring in that part of reality we call the brain. In it alone are we on the inside of reality and participators in its process. It is a light that guides, but a light kindled by reality as friction kindles a flame.

If any one calls this position dualistic I can only answer that he has not understood my argument and still lingers in the dualism of natural realism, be it that of common sense or the sharpened Cartesian type. Neither is this position similar to the double-aspect theory. The double-aspect theory (*e. g.*, that of Ebbinghaus) is an attempt at logical legerdemain. It seeks to overcome dualism by

words and not by a profounder analysis. How, pray, can we think of substance as the possessor of aspects? But the motives that led to this theory must give it precedence to materialism.

With the results of this study as a basis, we shall at last be able to examine thoroughly the problem of ontological causation with the question of the efficiency of this variant, consciousness, as an illuminating point of departure.[3]

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THE PERCEPTUAL BASIS FOR JUDGMENTS OF EXTENT

IN 1887, in the course of experiments on the extent of movement, Loeb[1] was led to the supposition that the judgment of extent is based on the perception of the duration of the movement. Since then Kramer and Moskiewicz,[2] in 1901, and Jaensch,[3] in 1905, have felt that their experimental results led to the same conclusion. Woodworth,[4] in 1903, discredits the hypothesis. His chief objections are: (1) Duration may be varied without entirely destroying the approximate equality of the extents; (2) extent can be judged better than time; (3) compensatory constant errors with higher speed are insufficient; (4) if we judged by duration alone, speed distinctions would be reduced to a matter of visual space or perception of force.

In June, 1909, the writer published, along with other matter,[5] the result of a long series of experiments on the relation between the judgments of extent and duration in the case of rectilinear arm movements. His conclusion there was that "the experimental facts point to separate processes of judgment for the two magnitudes, extent and duration. The four methods of separate accuracy tests, confusion, correlation, and correction failed to justify the assumption that the perception of any one characteristic of a movement is more primitive or fundamental than that of any other. The judgment of extent seems to be based on a system of signs which have been learned to mean extent directly. The same seems to be true of both duration and velocity."[6]

In the July (1909) number of the *American Journal of Psychol-*

[3] See, however, an article on causality, this JOURNAL, Vol. VI., pp. 323–328.

[1] *Pflüger's Archiv*, 41, p. 124, 1887.

[2] *Zeitschrift für Psychologie*, 25, pp. 101–125, 1901.

[3] *Ibid.*, 41, pp. 257–279, 1905.

[4] "Le Mouvement," Chap. IV.

[5] "The Inaccuracy of Movement," H. L. Hollingworth, *Archives of Psychology*, No. 13, 1909.

[6] *Ibid.*, pp. 85–86.

ogy, Professor Leuba[7] reported experiments, on the results of which he arrives at conclusions quite opposed to those quoted in the preceding paragraph. "The comparison of the length of arm movements is made through the comparison of the duration of one or several of the sensations arising from the movement and of a particular value of the joint sensation called here the rate value."

In the face of such conflicting opinion the writer desires to present in abbreviated form the results of his experiments and to give certain additional reasons in support of his earlier conclusions.[8] From 600 to 800 experiments were performed on each of four subjects, by the method of average error, on extents ranging from 150 to 650 mm. and on corresponding durations ranging from 1 to 3.5 seconds. By using a piece of apparatus already described elsewhere,[9] all the movements, while they remained active, were free

TABLE SHOWING RELATION BETWEEN ERRORS OF EXTENT AND ERRORS OF DURATION

Deliberate

	EXTENT					DURATION				
Obs.	Trials	Per Cent. C.E.	Per Cent. V.E.	Per Cent. Right Guesses	r	Trials	Per Cent. C.E.	Per Cent. V.E.	Per Cent. Right Guesses	r
W.	450	6±2.0	13±0.6	59	.22	375	5±1.3	11±0.7	46	.31
H.	450	19±1.7	12±0.6	54	.56	375	16±2.0	12±0.9	52	.54
Bt.	287	24±3.8	18±1.5	64	.79	264	20±3.5	16±1.2	61	.67
L.	375	7±0.8	7±0.6	60	.54					
Averages		14±2.1	12.5±0.8	59	.53		13.7±2.3	13±0.9	53	.51
				Incidental						
W.	375	8±1.7	13±0.8	49		450	10±1.8	20±0.9	53	
H.	375	9±1.3	12±0.6	56		450	8±0.9	12±0.6	58	
Bt.	264	15±2.2	15±1.2	65		287	17±2.8	20±1.3	63	
L.						375	5±1.5	13±0.9	56	
Averages		10.7±1.7	13.3±0.9	57			10±1.7	16.3±0.9	56	

from the *illusion of impact* which has vitiated so much of the work on movement. The apparatus gave simultaneous graphic records of the extent, duration, speed, and energy of every movement performed. For further details of the experiment and for a more complete presentation of most of the data used in the present article the reader must be referred to the writer's earlier monograph. The following table gives the C.E. and V.E. for the extents and their corresponding durations, when the observer tries to reproduce (1) the extent and (2) the duration of his first movement. In still

[7] *American Journal of Psychology,* July, 1909, p. 374.

[8] Professor Leuba's article was probably in the hands of the printer when "The Inaccuracy of Movement" appeared.

[9] H. L. Hollingworth, *op. cit.,* Chap. I.

other columns may be found the per cent. of right guesses when the observer guessed, after each trial, as to the probable direction of his error, and the coefficient of correlation between agreement of extents and agreement of durations calculated by the method of unlike signs. On the basis of these figures the writer draws the following conclusions.

1. The durations of extents intended to be equal have greater V.E. (16.3 per cent.) than the extents themselves (12.5 per cent.). There must be, then, some basis for the judgment of extent other than the perception of duration.

2. The C.E. seems to be bound up with the process of attention, the magnitude deliberately reproduced [extent (14 per cent.) or time (13.7 per cent.)] being greater than that of the magnitude incidentally reproduced [time (10 per cent.) or extent (10.7 per cent.)]. This evident separation between the magnitude attended to and that incidentally executed argues for separate processes of judgment for the two magnitudes, extent and duration.

3. If the perception of duration were the basis of the judgment of extent, incidentally reproduced durations should show as close correspondence as durations deliberately reproduced. This is not the case.

4. Extents agree as closely when the observers are reproducing duration (V.E. 13.3 per cent.) as when they are attending to the extent (V.E. 12.5 per cent.), but durations incidentally executed do not correspond as closely (V.E. 16.3 per cent.) as in deliberate experiments on reproduction of duration (V.E. 13 per cent.). That is to say, if either judgment is to be considered the more primitive and fundamental it is the judgment of extent rather than that of duration.

5. The coefficients of correlation between deliberate extents and incidental durations (+ .53) on the one hand, and between deliberate durations and incidental extents (+ .51) on the other, are positive. But all that this shows is the presence of positive correlation between extent and duration, no matter which factor is being attended to. There is as much evidence for the dependence of duration judgments on the perception of extent as for the converse.

6. If the observer is required to guess as to the probable direction of his error in the case of each attempt to reproduce either extent or duration, (*a*) the guesses in both cases correspond more closely to the actual errors of the extents (59 per cent., 57 per cent.) than to the differences between the durations (57.5 per cent., 53 per cent.); (*b*) the proportion of right guesses in experiments on extent (59 per cent.) is greater than that in experiments on duration (53 per cent.). These facts are unfavorable to the hypothesis that it is the perception of duration on which the judgment of extent is based.

Professor Leuba's chief argument is based on the proposition that the durations of movements judged shorter, equal, or longer than a standard fall out shorter, equal, or longer as compared with the duration of the standard. Unfortunately, neither the variability nor the reliability of the average is given, nor is the number of cases, from which a reader might compute the reliability himself. But even if the correspondence were found to be *complete* such statistical correspondence would throw no light whatever on the nature of the process of discrimination involved in the comparison of the two lengths. If Professor Leuba had kept accurate measurements of the depth of the wrinkles in the loose glove which covered the arm of the observer he would have found the same positive correlation—when the extents were judged shorter the wrinkles would have been found to be relatively shallow, and they would have been equal or deeper according as the judgment happened to be "same" or "longer."

It is a case in which denying one member of the disjunction disproves a conclusion which is not proved by the affirmation of the other member. In other words, even though the relations of the durations do coincide with the form of the judgment, this duration agreement may still be simply an incidental fact, on a par with the depth of the wrinkles in the observer's sleeve. With the rather constant speed characteristic of all observers in such experiments a greater extent must occupy a longer duration, an equal extent an equal duration, etc. To show that the durations *do not* agree as closely as the extents, as the writer has already done,[10] invalidates Professor Leuba's conclusion, while to prove that they agreed equally well would have no bearing whatever on the question of the perceptual basis of the judgment of comparison.

The movements reported in Professor Leuba's article were made in different parts of the arm's total swing, under different degrees of contraction, tension, joint position, etc. The only common factor was the time element. Now even to prove that under these unusual conditions the duration of movements is used as the basis for the comparison of their extent does not prove that this is what happens in other cases. But to show that even here the durations disagree more than the extents disproves the hypothesis completely.

With Professor Leuba's assertion of a special set of signs which serve as criteria for judgments of speed, the writer heartily agrees.[11] but he is convinced that along with this assertion should also go the recognition of the independent character of judgments of extent and duration as well.

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[10] "The Inaccuracy of Movement," Chap. IV., p. 40.

[11] *Ibid.*, pp. 61–62.

DISCUSSION

WHAT PRAGMATISM IS AND IS NOT[1]

THE confusion in regard to pragmatism by its critics on the one hand and the variety of doctrines included under that term by its defenders on the other hand make it highly desirable for all concerned that there should be a definite understanding as to what pragmatism means. Failing such an understanding, the term pragmatism should be dropped out of the vocabulary of philosophy. This would be a pity, as the term short-hands a good deal of circumlocution and has already been widely used. What place pragmatism shall ultimately come to have as regards various schools of epistemology or metaphysics, whether the old labels of idealist and realist, spiritualist and materialist, empiricist and apriorist, can still be retained, is of little consequence except to those who must set their house in order, providing that pragmatism as a doctrine must be reckoned with.

In the first place, pragmatism as a doctrine is so simple and so old as a matter of scientific procedure that it is impossible to understand why so much dust should have been raised about it by its opponents. It is simply the application of the ordinary method of the scientific testing of an hypothesis to philosophic hypotheses as well. It is certainly high time that philosophy, in many respects the oldest of the sciences, should take on scientific definiteness and severity or else regard itself as a department of poetry.

Now pragmatism, as so often stated, holds that you can not test the truth of an hypothesis or judgment independent of conduct. The truth of an idea or plan must be tested by the procedure to which it leads. You can, of course, insist with the medieval critics of astronomy that there must be seven planets because there are seven days in the week, etc., *i. e.*, from the *a priori* fitness of things, but the curiosity upon which science is based always insists on trying the assumption; and if experience indicates more planets, to revise the hypothesis to fit the facts. This is the "practical" testing of a doctrine in science.

The testing of a doctrine in terms of conduct, or comparing the anticipated consequences with the consequences to which it leads in being carried out, need not always mean material consequences. There is a conduct of the understanding as well as a conduct involving certain perceptual events as its outcome. The procedure

[1] Other recent contributions to pragmatism by the same author are: "Philosophical Tolerance," *The Monist*, Vol. XVIII., p. 298; "The Reality of Religious Ideals," *The Harvard Theological Review*, Vol. II., p. 58; "Truth and Meaning," *The Psychological Review*, Vol. XV., p. 172; "Truth and Agreement," *ibid.*, Vol. XVI., p. 55.

may be entirely of a logical kind as in formal logic and pure mathematics. But here, too, the idea is true only as it terminates consistently in its intended result. The consequences must be shown to follow from the definitions and not from assumptions or intuitions surreptitiously introduced in the course of the argument. The rules of logic, as the rules of ethics, have been adopted for their convenience in conduct.

Common sense and intuition may short-hand our scientific methods, and are valuable in many cases, but they are not truth, in the scientific sense, until the conclusions thus arrived at are systematically tested in the actual procedure of experience.

We sometimes have to choose between different rules or concepts. In this case we must ask ourselves what difference will it make if I choose one rather than another method of procedure. It may make no ultimate difference. The same problem can be solved by plain arithmetic or by algebra. Both solutions are equally true. Only habit and convenience, therefore, can decide between them. When two roads lead to the place to which I want to go, other things being equal, I take the most economic road. Esthetic or other motives, however, may influence me, besides the mere desire of arriving, and so I may choose the longest route. And so in the choice of hypotheses. But in any case the hypothesis is verified only as it terminates in the intended result, as its ideal consequences tally with the conditions which I have set myself to meet, whether purely logical or perceptual as well.

Now I certainly have a right to profit by previous experience, whether my own or that of others. I may have faith in a chart of the road already provided, without going through the trouble of mapping the routes in that particular neighborhood again. But this deductive truth rests no less on conduct; and if it should fail, in the process of adjustment, to satisfy the demands of further conduct or experience, it must be revised, however venerable or distinguished may be its ancestry. Truth about reality as a whole, or any part of it, however abstract, consists in the differences that reality makes to our reflective purposes in their historic realization.

To ask, therefore, whether a statement is true is equivalent to asking: What must we take the selected object as, in the procedure of experience? This is as true of the formula, $2 + 2 = 4$, as of the proposition, Socrates is mortal. For some purposes taking two pounds twice is equivalent to taking four pounds once. This obviously is not always so. Taking two women one hundred pounds each is not equivalent to taking one woman two hundred pounds, if the purpose be marriage. In the former case you will be thrown

into jail for bigamy. The intuitional character of the formula is due to the fact that we have forgotten the concrete procedure, the beads, for example, that were used by the primary teacher to overcome our stolid incredulity. The only way that you can know that you know is by trying your knowledge out, and even then, owing to the finitude of our nature and the complexity of reality, our certainty is decidedly empirical. We no doubt confront the environment with all sorts of tendencies or categories, more numerous than Kant's table, but truth they are not until they are reflectively tried out.

But is not truth agreement with reality? the hard-headed critic always comes back. Yes, certainly, *i. e.,* with the reality which we intend, which may be the constitution of number or of a chemical compound. We rarely ever aim at reality as a whole, any more than we aim at a bear as a whole when shooting at him. The subject of our judgments is almost always a selected part of reality, not reality in general. But the pragmatist doctrine so far from denying that truth is agreement with its intended reality, has for its purpose to make explicit what we mean by such agreement. And what we mean is what science always has insisted, viz., that the consequences which follow from the hypothesis, or the constitution of the object *as we have conceived it* on the basis of past experience, shall tally with the consequences in dealing with the object, or of further experience, formal or empirical, according to the problem set. There is no such thing as agreement in the abstract; no way of finding out the truth of an idea by merely examining its eternal fitness in general. It must, in order to be true, fit its intended constitution, as Royce has so splendidly shown, and this can only be found out by observing the results of our experiment, by the tallying of our hypothesis with our systematic observations. The data thus caught, simplified, and organized through the network of our concepts, which in turn have been progressively modified to meet the demands of the data, is what we mean by the laws of science. Whatever reality may be, science is a systematic sorting of experience in the realization of our interests.

I suspect, however, that what has given rise to this long and confused controversy is not pragmatism as an epistemological theory, but the various epistemological and metaphysical consequences which some of the "pragmatists" have arrived at, supposedly by the pragmatic criterion, and which have been included by them and their critics under the general heading of pragmatism. Of course, if you include any professed pragmatist's results under pragmatism, then you will have an indefinite number of pragmatisms with hope-

less confusion of the epistemological issue.[2] Just because a professed pragmatist, even William James, happens to hold a doctrine does not necessarily make it part of the theory of pragmatism. His philosophic results would have to be tested by the pragmatic criterion, quite irrespective of his having subscribed to it. Even the best peoples's conduct does not always agree with their ideals. And the pragmatic criterion is an epistemological ideal, which we finites can, only by cumulative striving, if ultimately, realize.

Let us see briefly now what pragmatism is not. In the first place pragmatism does not involve that the true and the useful always coincide. Such an *a priori* assumption about the universe is anything but pragmatic. Truth may, of course, turn out to be useful. I would not say with a German scientist that the best part of science is *das es gar nicht anwendbar ist.* The utilitarian motive has often been important in the investigation of truth, sometimes on the part of the investigators, but more often in the material promotion of investigation. It is true, however, that the most important investigations in pure science, such as the beautiful researches in light and electricity, were carried on without reference to their utilitarian consequences by people inspired by a divine madness to discover the hidden harmony of things; and their results were finally patented by people who reaped where they had not sown. But whether researches are useful or not, their usefulness does not make them true. On the whole, we are doubtless better able to adjust ourselves to an environment because we know more about it, can respond to its characteristics, though in limited, pathological cases ignorance and deception may be more useful than truth. But the statement that truth is, on the whole, useful is a conclusion and not a part of pragmatism as an epistemological criterion. Whether it is a legitimate pragmatic result any one is free to test, where all hypotheses must be tested, in the procedure of experience.

In the second place, pragmatism is not equivalent to humanism. No doubt it is true, so far as we are concerned, that reality must pass through human nature to be known. We humans know reality by the differences it makes to our human, specific, reflective purposes in their attempt at realization. But it is not our being human that makes our hypotheses come true; it is their tallying with the constitution of the object aimed at, as it appears in further experience. And there is nothing to show that this experience, whether on its

[2] Lovejoy's "Thirteen Pragmatisms" is a measly allowance, when you consider the variety of human nature and the number of possible applications of the pragmatic method. But this is a good illustration alike of the ungenerous temper of the "intellectualist" and of his unscrupulousness in creating a prejudice against his opponent.

logical or perceptual side, is peculiarly human. The weight, or color, or size, or position of a thing is not peculiarly human as distinct from other animals. A "dog-faced baboon," so far as we know, has the same sort of perceptions that we have, and is subject to the same laws of association. If a dog-faced baboon or a tadpole should construct hypotheses or their equivalents, they would have to be verified in the same pragmatic way as human hypotheses are. It matters not what sort of finite being tries to arrive at truth, whether man, baboon, or angel, the test of truth, so far as we can see, would be the same.

If what is intended is the statement that the nature of reality is made over in knowing it and that therefore we are limited to the charmed circle of experience, this too is an unpragmatic assumption. While it is a mere circle to say that we can know reality only as it appears in cognitive experience, or for what it is known as, it is a gratuitous assumption to insist that what reality is known as, is contrary to what reality is, that the weights and distances and masses of things exist only as we humans take account of them. When we take account of them they have *meaning* for us, but our taking account of the qualities of things at all is generally forced upon us by their existence, which we must meet in order properly to adjust ourselves. At least it is not pragmatism to decide *a priori* that things are not what they seem.

May there not be cognitive beings superior to us humans? Or are the humanists absolutely convinced that we humans are the only cognitive beings in the universe? That certainly is no part of the pragmatic theory of truth; but, even if true, it is not being human that makes a proposition true, but its termination in the intended facts.

Is pragmatism, as a theory of truth, committed to the instrumental point of view as regards concepts? Not in the sense that truth exists solely for the sake of satisfying certain demands extraneous to itself, for example the biological end of adjustment. Truth sometimes finds its inspiration in such practical demands, but it sometimes finds its motive in scientific curiosity. In any case the test must be the same. Truth is always teleological, because it exists for the sake of a relation to a larger whole, but this relation need not be instrumental in the narrow sense that truth is an extraneous tool, like a knife, to be judged by its mere success. False ideas may be temporarily successful. Truth as a matter of fact must always be imitative of its object to a certain extent. It can never be conventional in its *content*, however conventional our *symbols* may be. In the case of knowing a system of truth it must be imitative of the content of the object; in the case of thing-objects it must be imitative

of certain qualities of the object. Inasmuch as our finite truth is not exhaustive, but always implies a more, a larger constitution to be investigated, it must be regarded, in so far as instrumental to its own completion, a means to its own more comprehensive end.

Can the pragmatic criterion be stated in terms of satisfaction? That depends upon what sort of satisfaction we mean. No doubt the seeking for truth has its own hedonic tone, according to its success or failure. But the satisfaction, so far as the truth interest is concerned, is the tone accompanying the testing of the hypothesis in procedure, so far as that special intent is concerned. But the truth satisfaction may run counter to any moral or esthetic satisfaction in the particular case. It may consist in the discovery that the friend we had backed has involved us in financial failure, that the picture we had bought from the catalogue description is anything but beautiful. But we are no longer uncertain as regards the truth. Our restlessness, so far as that particular curiosity is concerned, has come to an end. And this satisfaction may sometimes be strong, even when the practical outcome is against us. The rejected lover gets some peace of mind from knowing the truth as to his failure. But this is hardly the satisfaction of winning his suit.

Is pragmatism realistic? Only in so far as it intends a world beyond our finite cognitive purposes. The finite fragmentary intent must find its reality or correction in a larger whole. I do not know of any striving for truth which is not realistic in this sense. How could it be a striving for truth otherwise? But obviously a criterion of truth must be unbiased at the outset as regards the epistemological or metaphysical result of its application. The reality we seek to know may ultimately be more experience—yes, we must be willing to have it turn out to be an absolute unity of thought, if the procedure of truth leads that way. But pragmatism neither assumes at the outset that the object in order to make any difference to the cognitive purpose must itself be experience, nor does it assume *a priori* that reality can not possibly be what it is known as being, because external to experience. What reality is, what differences it can make, is precisely to be found out. The constitution of the universe is idealistic or materialistic, monistic or pluralistic, according as we must take it, as the outcome of the pragmatic test. But we must all start with the same criterion, else there can be no discussion of truth.

Truth is systematic meaning, systematic experience about the object. This meaning, in case we are striving to know other experience, must be identical with the content of the object; but the qualities of an object which is not experience may become content for us through perception. In any case truth is our systematic

percipi, as it is revealed in our specific procedure, whatever the metaphysical character of the object may turn out to be. We have no right to take for granted that what is to be known is more content, independent of our knowing, with which our preformed guess can be accidentally identical and so be called true in advance of verification.

It is difficult for me to understand what is meant by unverified truths—unverified science, truths which no one knows to be true, for if any one knows them to be true—God, or man, or monkey, they have fulfilled the pragmatic test. They are seen to terminate or find their completion in the intended object. If a proposition has no systematic basis in experience we speak of it as a mere guess. As that brilliant pragmatist, Xenophanes, puts it, "All are free to guess" and "These are guesses something like the truth . . . but by seeking they gradually find out what is better." In Xenophanes's time there was but little cumulated scientific observation. Hence he is naturally impressed with the guess character of his statements about the universe. When a supposition is based upon analogy and previous scientific observation we call it an hypothesis, but it is only as the hypothesis is fully tested in terms of the intended facts that we call it truth. Truth, therefore, so far as we finite seekers are concerned, is a limit which we are far from having realized. Whether we can realize it or not only the historical outcome of the pragmatic test can prove. It is certainly unpragmatic to say in advance that truth is unrealizable. In the meantime we have our provisional "truths."

I suppose the reason that some have insisted upon propositions being true in advance of being tested is that in individual experience, especially in an advanced stage of science, we find a large body of social truths, which we can take, for practical purposes, as ready-made. We find that truths exist independent of our individual verification, and then some assume that they exist independent of all verification. Seeing the agreement of the hypothesis of gravitation with its intended facts, they insist that the hypothesis must be true in advance of the discovered agreement, as though truth could be a guessing *in vacuo*. What they mean is that reality has a constitution in advance of our investigations and that so far as our cognitive nature is concerned the qualities of reality are not created but discovered. Whether they are created through our volitional nature, or exist independent of our act or positing, is a question which the application of the pragmatic method alone can determine. But all this controversy about preexisting truths is a lexicographical one and would be over if we recognized the established philosophic usage, as old as Xenophanes, that truth is systematic meaning, corrected and completed in its intended reality.

If we state truth thus, there can be no ultimate difference between truth and the test of truth. A proposition is *proven* to be true because it terminates in its intended object, imitates this either as regards its inner content or as regards its qualities. But it *is* true for the same reason. What makes the test of truth seem something different from the truth itself is that in the process of verification the test seems external to the intent of thought. It seems to happen to the idea in a more or less accidental way. But this is a superficial way of looking at the process of discovery. For, in the first place, the facts only happen to the intent of thought *because we are seeking them,* however much our meaning may have to be corrected in the process. In the second place, the test is our further experience about the object *as selected* by the intent. But the intent is not, taken by itself, the truth, any more than the consequences of further experience are the truth taken as external happenings. It is the intent as terminating in the selected facts which constitutes the truth. And this termination is the test of truth, or the intent as tested constitutes the truth.

Is pragmatism a theory of empiricism as opposed to rationalism and *a priorism?* No, pragmatism is not committed to any *a priori* doctrine of the origin of ideas or their connection. It is not committed to Hume's association theory any more than to Plato's pure dialectic. Pragmatism may be said to agree with rationalism in holding that truth has a formal side. An hypothesis or system must be internally consistent. But pragmatism insists that this is not sufficient: there must also be external agreement, or agreement of the hypothesis with its intended facts. As regards the other historic antithesis, that of empiricism and *a priorism,* pragmatism is equally non-committal. It is a theory of the nature of truth, not of the origin of its categories or postulates. Whatever demands or tendencies are inherited, they must be consciously tried out in experience as regards their agreement with reality before they can be called true. The categories might originate by use, inheritance, by natural selection, by divine implanting, or by mystical intuition, so far as pragmatism as a theory of truth is concerned. The question is: Will they work in simplifying experience and meeting the character of the environment? The theory of their origin must itself be subjected to the pragmatic test.

Is pragmatism at the outset committed to time and chance as the ultimate character of reality and, therefore, to the impossibility of any final truth? This again is a theory to be tested by its pragmatic outcome. *A priori,* eternalism may be the outcome of pragmatism as well as dynamism; or perhaps partly the one, partly the other. Because the discovery of truth is a temporal process, it does not follow

that truth relations as discovered are temporal. The truth $2 + 2 = 4$ may be eternal, however long was the evolution which led to its discovery. At any rate, there can be no such thing as pragmatic dogmatism.

A professed pragmatist may of course hold any of these doctrines, and a large number of them, either as his individual application of the pragmatic test or for other reasons. He may also, like myself, be an Episcopalian, a free-trader, etc. Do all the doctrines and practises of the Episcopal church become pragmatisms when a pragmatist belongs? I have known pragmatists to drink beer, to attend dime theatres, and even to swear. Are all such practises with their implied damnable theories of life therefore pragmatisms? And do they also come under *Scepticismus,* as the German critics would say? God forbid. It makes one's flesh fairly creep to think of all these uncanny associations—these sins on the part of our clever young critics, committed in the name of pragmatism. But are they not, after all, primarily sins against formal logic? A is a free-trader. A is a pragmatist. Therefore all pragmatists are free-traders. That looks very much like an illicit minor in the third figure. It might also be treated as a fallacy of composition. It would seem as though the "intellectualists" ought to have a little respect for formal logic.

If you say that in the above case pragmatism is not new at all, but as old as science, I would quite agree with you. No one more than the pragmatist has disavowed any intention at originality. It is better to be true than original. But the amount of dust raised seems to indicate that an old, implicit scientific procedure was but vaguely understood. If the result of this paper should be to convince my readers that they are all "pragmatists," then we shall have "peace on earth, good will to men" once more, than which no more blissful consummation could be desired, unless it be strife.

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REVIEWS AND ABSTRACTS OF LITERATURE

Logic, Inductive and Deductive. Adam Leroy Jones. New York: Henry Holt & Co. 1909. Pp. x + 300.

In the preface the author states that the book "is not designed to serve as an introduction to general philosophy. Its chief claim to novelty is in the arrangement of the subject-matter. The traditional arrangement, in which the deductive processes are presented first usually leaves with the student the impression that the method is chiefly deduction, and that there is no very close connection between this and the rest of the

subject. The arrangement, which is here adopted, was selected on pedagogical grounds and not in the interests of any epistemological theory."

The book is divided into three parts, entitled, respectively, "An Outline of Scientific Method," "Supplementary Methods," and "The Construction of Systems." By making the discussion of deduction subsequent to that of induction, Professor Jones successfully eliminates the evil of which he rightly complains. In this book the syllogism is more closely related than is customary to other parts of the subject and is deprived of undue importance. This achievement alone would entitle it to consideration. Moreover, the presentation employs a variety of apt illustrations which enables it to avoid the dead level of undisturbed monotony. While some parts follow the beaten path, as is natural in a subject like logic, the book has a certain freshness of treatment, and it offers a view of the subject that is commendably well-balanced and well-organized.

With regard to the arrangement of the subject-matter, it may be said that, while the plan of treating induction prior to deduction is in the main well executed, it involves a detail which is apparently both undesirable and unnecessary. The subject of induction follows upon the discussion of terms and propositions; and it jars one's sense of fitness, therefore, to find that before we can go on from induction to the syllogism we must once more discuss propositions, this time from the standpoint of conversion, obversion, and contraposition. I venture to add, also, that the author's remarks on the misuse of words seem more perfunctory than is consistent with the importance of the subject. A more serious criticism, however, can, as I think, be directed against the treatment of causation and coexistence. Here Professor Jones appears to have been entirely too submissive to the prevailing fashions. Causation is defined as an unconditional or necessary connection, and is properly distinguished from certain coexistences—such as that of gravity and inertia—which, though likewise universal, do not seem to be of a causal nature. The term "necessary," which is explicitly distinguished from "invariable" must be taken as synonymous with "unconditional," unless some mysterious connotation of a metaphysical character be intended. Professor Jones seems to mean that the terms are to be used as synonymous. But granted that causal connections are unconditional, this quality provides no differentia. Universal coexistences are quite as unconditional. The fact that two properties are universally concurrent means nothing in the world except that this concurrence is independent of all conditions. Incidentally, too, it may be remarked that, while the author says, speaking of gravity and inertia, "the sciences furnish innumerable instances of a like sort," in the very next sentence Bain is quoted as saying, "there are very few general laws of pure coexistence" (p. 83). Are these statements contradictory, or does the author mean to distinguish between coexistences and laws of coexistence?

With regard to the proof of these laws of coexistence, as distinct from laws of causation, the author contents himself with Bain's statement that they "can only be proved piecemeal; each stands on its own evidence of

observation in detail; no one assists us to prove another." If it is permissible for logic in this instance to set aside a question of method by a reference to "observation," it is permissible in any other case as well. The manner in which the proof of universal connections is habitually ignored by logicians is one of the curiosities of present-day logic.

This matter of universal connections requires emphasis because it is connected with a traditional inconsistency in the treatment of causation. This inconsistency reappears in Professor Jones's exposition. As was stated a moment ago, cause is here defined as unconditional connection. Such a connection is necessarily a universal connection. That causation stands for a form of universal connection appears, further, from the fact that causation is referred to as a form of law; and a law, we are told, "states a universal connection which actually holds true" (p. 81). There is only one sense, however, in which a causal connection can be regarded as a universal connection. A causal connection is universal only when the cause is a "total cause." The definitions of cause frequently imply total cause. Yet the methods employed to ascertain causal connections are habitually used to study partial causes. The "method of difference," for example, merely enables us to analyze out some factor which is a constituent of the total cause. In this, the more popular sense of the term cause, the connection is by no means universal, unless the connection be vaguely interpreted as a "tendency." How a connection that is truly universal, in the sense of having no exceptions, is to be tested, is a question that receives no notice, because it is not properly distinguished from the study of causal connections.

In this general context I may be allowed to add that the author's device of treating statistics as a supplementary method argues a misconception of the function of numbers in the proof of causal connections. Thus the "method of difference" is by preference limited to a single case of respective presence and absence on the part of the factor that is studied. This single case, however, is in the main merely an ideal limit. The number of cases necessary to prove a causal connection varies in inverse ratio to our knowledge of the conditions. If we are confident that the conditions are entirely under our control, as in the case of some laboratory experiments, a single instance may suffice; yet even then, as Aikins has pointed out, we are unwilling to consider an important conclusion as proved, unless the experiment is repeated, either by ourselves or by others. This sharp separation of statistics not only obscures the service performed by numbers in the elimination of irrelevant considerations, but it inevitably suggests that the "method of statistics" introduces a new principle, instead of being merely an application of the "method of difference" to units consisting of groups instead of individual cases. The author, in fact, states that the "method of statistics" is a different method (p. 190), and that the cause discovered by *this* method is usually only a part of the entire cause (p. 193).

In the application of Mill's methods the author recognizes, apparently, that the directions furnished by the methods are essentially counsels of perfection; that, instead of relying upon exact conformity to the demands

made by them, we, in fact, rely upon something quite different. An inductive inference is verified "when it fits the facts and no alternative inference does" (p. 88). This is both true and important, as far as it goes, but the author unfortunately does not attempt further analysis. When are we warranted in concluding that alternative inferences do not really fit the facts? The author invokes consistency, but consistency is a shifty term. It may mean absence of contradiction or it may mean absence of motivation. The doctrine that all doubt must be motivated, upon which Hobhouse rightly lays so much stress, and which has frequently been formulated, after a fashion, in courts of law, is apparently implied, but does not secure even a passing notice. This doctrine, furthermore, properly connects the subject of probability with completely established inference. Probability decreases with the degree of motivation. One may, therefore, doubt the expediency of treating probability as a supplementary method, as is done here; to say nothing of the advisability of placing all the emphasis upon the form of probability which is determined by the behavior of groups and which on this account lends itself to mathematical treatment. By isolating statistics and probability, the author gives the same false impression regarding the study of scientific laws as that against which he protests in the case of the syllogism.

Under the heading "Explanation" the question is raised (p. 239) whether, in the progressive reduction of knowledge to laws that are more simple and fundamental, the laws which constitute the limit of the process are to be regarded as inexplicable. The answer to the question is negative, for the reason that "reference to simpler and more fundamental laws is merely one method of bringing the data into a system." "The parts are explained," it is said, "by being given their proper places in the whole." Here, it seems, we may reasonably object that the author offers either too much or too little. The question should either not be raised, or the answer should be amplified so as to set forth in detail just what it means. In ordinary procedure the term explanation has a specific meaning because there is constant reference to laws which in the given situation are treated as ultimate. But when the attempt is made to eliminate everything that is ultimate we are on different ground, and we are then in duty bound to be specific or lay ourselves open to the suspicion that we are playing with the words "system" and "explanation."

As has been indicated, some of these comments make Professor Jones the scapegoat for the sins of his class. The criticisms, it is hoped, will not tend to obscure the genuine merits of the book, which make it a welcome addition to the literature of the subject.

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Logica Come Scienza del Concetto Puro. Filosofia dello Spirito, Vol. II. Second revised edition. Benedetto Croce. Bari: Guis. Laterza & Figli. 1909. Pp. xxiii + 429.

La Critica, the bi-monthly review of which Croce is editor, is devoted to literature, history, and philosophy. Even more than the "Estetica,"

this, the second volume of the author's philosophy, shows the marks of the journalist's sanctum. It, too, is no less a literary and historical than it is a philosophical treatise. Almost is a body shocked to find, in a book founded upon Aristotle's "Metaphysics," Kant's "Critique," and Hegel's "Logic," clear, terse description, familiar allusions to the poets, and even epigrams. And yet Croce will never be accused of writing literature philosophically; the present work lacks nothing in the severity of its logical interests—indeed, one of the gravest faults to be found with it is that it attempts too much in too scant quarters. As for Hegel, so for Croce; logic is the philosophy of philosophy. But to chart the bearings of pure reason in the world of practise and science is more of a task to-day than in Hegel's time. Had Croce been content to touch only the issues of traditional logic, he would have lost vivacity but gained power. In preferring to span four firmaments, though, in a single flight, he has been compelled to take the short straight line of dogmatism across each. And, in so doing, he takes the bread out of the critic's mouth; for to say the lightest word on half the questions raised in the "Logica" would be to review all contemporary thought; on the other hand, to judge Croce's own conclusions on any one of these is hazardous, because, where proofs are abridged or altogether omitted, praise and censure both go blindfold. Just how much, for example, Croce means by his great central equation: "Filosofia = pensiero = storia = percezione della realtà," the reviewer must confess he does not know, after much searching. Sometimes it seems to spell absolute idealism in bold letters. But how can that be when we read in many passages that neither the reality of percepts nor the knowability of reality in general can be questioned? Or when Croce explicitly repudiates the entire Hegelian procedure of deducing history from some "sacred number" of concepts? Again, the equation apparently spells critical realism, or, more exactly, something very much like the immanent realism which Mr. J. A. Stewart finds in Plato's doctrine of ideas. But again we hesitate; for, in his "pure concept," Croce has precisely Plato's "idea of ideas," and it is this that alone is truly real, truly philosophy, and truly history. One must often wonder whether he is doing anything more than to develop to its limits this epistemological absolutism which Plato left hanging in the air. Every concept, by as much as it leaves some relation essentially undetermined, by so much falls short of being completely real, and is hence, in the same measure, less than a "pure concept." So, Croce says, a "pure concept" is absolutely clear in the mind of him who thinks it, inasmuch as defective expression means, *ipso verbo,* unclarity of thought, which is a shimmering of relations. Any concept that is concrete but not universal, or universal without perfect concreteness, likewise is impure. As for further characteristics of conceptual spotlessness, we are told, with admirable but discouraging consistency, that "their exposition resolves itself into a complete account of the philosophy of spirit." Of course, then, every concept of every-day life, mathematics, and science becomes a "pseudo-concept" for Croce; for each is either empirical or abstract or doubly befouled. Worse yet, none is by any hook

or crook reducible (Croce does not say exaltable) to the "pure concept"; for each is cut to the pattern of practical life, and no amount of sewing will make the cloth whole again. Is it possible that our Neapolitan is indulging in an ironic *reductio ad absurdum* of absolutistic logic? If, as he reiterates, philosophy is *the* "pure concept," then there never have been and never will be philosophers. But how take that assurance at face value, as we read further that every man has a philosophy. for philosophy and religion are one and the same, and every man has a religion? Only one thing seems wholly clear; the author, writing four books in one, to wit, a complete logic, a book on the relation of philosophy to other disciplines, another work on error and method, and a history of logic from Socrates to Peano, has made one word do service for three or four; in short, he has admitted fatal equivocations. Were it worth while, the reviewer could point out a score or more of instances where "history" means now the flux of human events, now the manner of men's reconstructing the past, now the school-room discipline; or where "idealism" stands sometimes for the belief that there is no thinking without thoughts, and sometimes for a much less innocent German creed. But why exhibit the original sin of philosophy again? It is better to recognize the indubitable keenness of certain chapters, notably those on the categories (p. 163), mathematics and physics (p. 251), and the whole logistic movement (esp. p. 93). Here Croce's strong sense of reality makes his criticisms two-edged; they hew for the Philistine as well as for the metaphysician. We would not deny them the same cutting power elsewhere; the thinker has Hegel's nostrils for scenting abstractions and running down the underlying unity in opposites. Perhaps shorthand has betrayed him in the sections where his meaning is obscure or anathema. But his extensive analysis of the logic and concept-building of science echoes with so little original vigor the popular phrases about "arbitrary constructions," "devices for practical control," "regarding the mobile and spontaneous as fixed and determined," etc., that the reviewer, for one, would gladly believe the editor of *La Critica* to have carelessly mixed in with his proof-sheets at these passages the manuscript of some amateur contributor. The philosopher may be tickled by the flattery that science is only a handmaid of his household; but will he go further with Croce and restrict its duty and privilege to collecting specimens, ticketing them, and putting them away in good order? Will he then take the last step and say that *no scientist strives for truth at all,* that goal being reserved for the philosopher? Croce dares this much. Again one is on the verge of asking whether we have to do with a deep satire, but the context halts us.

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Reason, Thought and Language, or The Many and the One. DOUGLAS MACLEANE. London: Henry Frowde. 1906. Pp. xv + 583.

"These pages represent an effort to strengthen and revivify formal logic . . . by bringing it into closer connection with the living facts of

thought and speech." The alternative title is explained by the author's opposition to "the 'new logicians' who hold that there can be reasons without reason." "Except in the light of what is universal, thought can not exist." "The mind can never work from one point to another except through a universal." "An internal necessitation or confliction of ideas must be given . . . by means of a middle term." This standpoint explains the presence of such chapters as the following and gives a general indication of their contents: "The Justification of any Thought," "The One Sought in the Many," "Immutability of Rational Law," "Reason Regulates Thought," "Whatever is Rational is Syllogistic," "Universals, How Obtained."

The rest of the thirty-two chapter heads are about what one would expect to find in a rather advanced book on deduction. Induction receives but scanty treatment, and there is nothing whatever about historical and statistical methods. For with Mr. Macleane all logic is formal. "In truth, neither in the hands of its founder nor in those of his exponents, whether peripatetic, Arabian, or scholastic, was it formal enough, being blended with natural philosophy, transcendental metaphysics, and divinity." A purely formal logic may be accused of narrowness and rigidity; but it really has an "unlimited field before it in the living facts of idiomatic expression."

In this field of idiomatic expression the author is very much at home and he may well call it unlimited. The book is a veritable phrase-makers's museum, in which every idiom in Greek, Latin or English, that one ever dreamed of finds a place. How any man could interlard his discourse with such a host of them is truly marvelous. But the dexterity of the writer in this respect makes his book almost unreadable. One trips so much over the small thoughts that he is kept wondering what has become of the big ones.

H. Austin Aikins.

Western Reserve University.

JOURNALS AND NEW BOOKS

REVUE DE PHILOSOPHIE. September, 1909. *Le problème critique et la perception extérieure* (pp. 243–255): P. Gény. – The perception of externality is purely and simply an act of apprehension. It is not, except in abnormal cases, subject to error. Error may arise, however, when, as is generally the case, the new perception is affected by the memory of previous perceptions. Hence the doctrine is critical, not naïve. *L'atome nécessaire* (pp. 256–271): A. Véronnet. – The first portion of this study, in the form of a preliminary discussion, considers Ostwald's theory of the ions and the thermodynamic theory. The former is one with the atomic theory in that, since ions are corpuscles, groups of atoms, or fragments of atoms, it admits in the same sense as the atomic theory the discontinuity of matter. Moreover, the theory sheds no new light on various chemical problems, such as that of constant proportions, stability, etc.

Thermodynamics, also, is not in a position to disregard atoms, for the establishment of some of its most ordinary formulæ depends upon the atomic hypothesis—in the determination of the coefficient of expansion of gases, for instance. *Le mécanisme moniste de Taine. II. Le système* (pp. 272–288): M. BAELEN. – In the philosophy of Taine we find only mechanism and determinism: physical laws are identical with mathematical verities, and the more one studies ethical problems the more evident is their analogy to the experimental, and even the exact, sciences. "The sum of things which exist is the world; the law or primitive formula from which one may derive this world, is God." *Revue critique de morale* (pp. 289–313): G. MICHELET. – Review of four recent books dealing with ethical problems. The first of these—Fouillée's *Morales des Idées-Forces*—marks a reaction against excess in the science of morals and purely objective research in ethics. The thesis proposed, however, namely that since the morality of an act depends not upon an exterior and superior commandment, and since it is necessary to consider the act exclusively in the subject, therefore the analysis on the part of the mind is sufficient—this thesis leads only to doubt and uncertainty. M. Leclère's *La Morale rationnelle dans ses relations avec la philosophie générale* is more hospitably received. The aim of the work is to justify rational ethics by showing that ethics as a whole is dependent upon reason, and proceeds necessarily and directly from reason. The thesis contains the doctrines of absolute spiritualism and universal ethics. M. Paul Gaultier's *L'Idéal moderne* is a worthy and commendable work, the object of which is to refute those who pretend to demonstrate the antinomies between Christianity and contemporary thought. In a short treatise M. Chollet answers affirmatively and satisfactorily the question: *La morale est-elle une science? Analyses et comptes rendus:* F. Maugé, *Le rationalisme comme hypothèse méthodologique.* J. H. Boex-Borel, *Le Pluralisme:* F. WARRAIN. H. Roulleaux-Dugage, *Théorie des principes de l'Absolu.* P. Volkmann, *Materialistische Epoche und Monistische Bewegung:* P. CHARLES. W. James, *Précis de Psychologie:* P. FONTANA. Ch. Henry, *Psychobiologie et énergétique:* F. WARRAIN. Sully-Prudhomme, *Le bien social:* T. DE VISAN. G. Deherme, *Auguste Comte et son œuvre:* T. DE VISAN. R. Bonola, *Die nichtenklidische Geometrie:* L. PÉTROVITCH. L. Davillé, *Leibniz historien:* H. OLLION. J. Dedien, *Montesquieu et la tradition politique anglaise en France.* G. Brett, *The Philosophy of Gassendi:* P. CHARLES. A Rosmini, *Maxims of Christian Perfection:* L. BILLIA. *Recension des revues. Chronique: Ernest Naville:* P. BORET.

REVUE PHILOSOPHIQUE. October, 1909. *Le VI^e congrès international de psychologie* (pp. 329–350): A. REY. – A criticism of the methods of the congress and an exposition of the leading discussions by topics. Positive psychology has clearly assumed an independent position as an experimental science entirely outside of any system of metaphysics. *Esthétique et sociologie* (pp. 351–374): L. ARRÉAT. – Art is not a social instrument, but esthetics may attempt the problem of determining what are the social conditions of those forms of life which constitute art. The

solution of this problem, however, lands us in psychology rather than in sociology. *La Philosophie néerlandaise* (2e article) (pp. 375–391): E. D'OLIVIERA. – A discussion of the philosophy of M. Van der Wijck in its relations to that of M. d'Opzoomer and certain foreign philosophers. *Revue générale. Les revues psychologiques allemandes:* FOUCAULT. *Analyses et comptes rendus.* E. Maugé, *Le rationalisme comme hypothese méthodologique:* L. DAURIAC. Fr. Paulhan, *La morale de l'ironie:* G. PALANTÉ. A. Leclère, *L'éducation morale rationnelle:* L. DUGAS. A. Joussain, *Le fondement psychologique de la morale:* FR. PAULHAN. J. Maxwell, *Le crime et la société:* G.-L. DUPRAT. W. MacDougall, *An Introduction to Social Psychology:* TH. RIBOT. A. R. Abelson, *Mental Fatigue and its Measurement:* B. BOURDON. Dr. Pierre Janet, *Les Névroses:* R. MEUNIER. Joffroy et Dupouy, *Fugues et vagabondage:* CH. BLONDEL. H. Wallon, *Délire de persécution:* P. C. Mansois Duprey, *Étude médico-sociale sur la responsabilité atténuée:* P. C.

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NOTES AND NEWS

THE *Nation* in its issue for October 21 quotes a letter from Mr. James Loeb, who has just endowed the Charles Eliot Norton Memorial lectureship in the Archeological Institute of America. Mr. Loeb has by previous gifts made it possible for the Institute to secure as lecturers several distinguished scholars, and by this last gift he further qualifies the Institute for its preeminent work. We quote in full the letter from Mr. Loeb, which gives not only the terms of the gift, but also commemorates the services of Mr. Norton to American scholarship.

PROFESSOR FRANCIS W. KELSEY,
President of the Archeological Institute of America,
Ann Arbor.

My dear Sir: I take pleasure in informing you that I have instructed my secretary to pay over to the treasurer of the Archeological Institute of America on October 21 $20,000 of the 5 per cent. bonds of the United States Steel Company for the endowment of the "Charles Eliot Norton Memorial Lecture Fund."

The annual income of $1,000 is to be paid as an honorarium to one or more distinguished archeologists for a course of lectures to be delivered before the

affiliated societies of the institute. In choosing the lecturers preference is to be given to European scholars, but, in the discretion of the council, invitations may also be extended to American scholars.

The experience of past years has amply demonstrated that a constantly growing public eagerly avails itself of the opportunity which these lectures afford to keep abreast of the latest researches of a science which is constantly increasing our respect for the achievements of antiquity. I deem it a privilege to endow the institute with a fund that will enable it, for all time, to help, not only its members, but also the general public, to enjoy the fruits of future archeological discovery.

October 21 marks the first anniversary of the universally regretted death of Professor Charles Eliot Norton, of Harvard University, and this day seems peculiarly appropriate for the creation of the endowment. He was the real father of the Archeological Institute of America. Thirty years ago he had the satisfaction of seeing the idea which he had long and enthusiastically fostered in the minds of a small company of scholars, take concrete form in the establishment of the institute, whose services to learning have amply justified his eager hopes. It is fair to say that one of the most far-reaching of these services lies in the opportunity given to a selected body of young students to inspire themselves at the actual sources of ancient culture. Our universities lose no time in appointing these young men, and their teaching is giving new life and vitality to an important branch of learning.

Two generations of Harvard students were privileged to hear from Professor Norton's inspiring lips what "man's sacrifice to beauty," as Mr. Henry James has well called man's artistic effort, has done for the uplifting of the race. To them the establishment of the Charles Eliot Norton Memorial Lecture Fund will, I hope, be a welcome event. To that larger circle who knew and valued Mr. Norton for his fearless devotion to his country, for the delightful essays and scholarly public addresses which marked the stages of a long and singularly distinguished life to the pursuit of *res humaniores*, it may serve as a token of the devotion and admiration of one of his pupils.

Yours faithfully,

JAMES LOEB.

Villa Waldfried, Murnau a/Staffelsee, September 8, 1909.

CESARE LOMBROSO, whose death occurred recently, was born in Verona in the year 1835. He studied in Turin, Pavia, and Vienna, and was able to finish his medical course at the age of twenty. At twenty-three he was made a military surgeon, and at twenty-six professor of psychiatry at Pavia. He was early made director at the asylum at Pesaro, and he became, subsequently, professor of psychiatry and legal medicine at Turin. His well-known work "L'Uomo delinquente" appeared in 1876. He founded the *Archivo di psichiatria, scienza penali ed antropologia criminale* in 1880.

THE eighteenth annual meeting of the American Psychological Association will be held in Boston and Cambridge during Convocation week in conjunction with the Society of Naturalists and the American Association for the Advancement of Science. The Association will hold its meetings on Wednesday, Thursday, and Friday, December 29, 30, and 31.

DR. E. H. HENDERSON, professor in education and psychology at Adelphi College, Brooklyn, New York, has been transferred to the chair of philosophy in that institution.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

SOME NEGLECTED PARADOXES OF VISUAL SPACE. II

THE paradoxes of the blind spot and of peripheral vision exhibited in this JOURNAL a month ago seem to have left on our hands a spatial discontinuity which threatens the natural-realistic hypothesis there invoked to clear up those same paradoxes. If, one might protest, visual fields are aggregations of unit extensions, each formless and boundless, the clean-cut shapes and boundaries which the uninstructed eye senses must be illusory, and hence natural realism a vulgar error. How can spaces without form or limit, by merely standing in some inexplicable fashion next to one another in the mind, ever acquire or weave discrete objects of consciousness? And, granting that the miracle does occur, how can these things be more than subjective, if extensions out of which they are evolved are as we have described them and genuinely real to boot?

These troubles harass only the half-hearted realist. The bold one, knowing that to dip timidly into any paradox is to invite a broken back, sticks to his hypothesis through all its strangest, most discouraging passages. He never mistakes a hard knot for a rout. He knows that it is frail wit to desert a point of general view just because most of the good people who have climbed the hill have observed some of its vistas carelessly. Him we must imitate here, for it is his philosophical explanation that we are putting to the test of the unusual facts already noted. To cover these facts, it must reject several doctrines long since approved by psychology. Whether, in the resulting conflict, it is realism or the science that must yield, is another matter. But the former must win or lose on the strength or weakness of the following three pseudo-paradoxes, each of which is inextricable from it:

1. The continuity of the visual field is in no manner a feature or an outgrowth of extension as extension; it is nothing more than a product of blindness. It involves neither an *a priori* synthesis nor any associative mechanism nor yet a primitive "vaster sensible extent which can enter the mind simply and all at once."

2. The group of extensions constituting a given visual field is essentially like a group of simultaneous tones or pressures or pains in its ordering and manifoldness.

3. The same logic that is valid in all arguments touching physical and geometrical spaces holds for visual space and must be used in the interpretation of perceptual errors, illusions and the so-called "objective worth" of empirical data.

1. Ramon y Cajal and other histologists have shown that each rod (and cone) in the retina is separated from its neighbors by protoplasm insensitive to ether vibrations. Thus, a microscopical blind spot exists between every pair of nearest retinal organs, a spot none the less significant because very small. Now, says the realist, each extension has neither bound nor shape; hence, when twenty or a million are empirical simultaneously in the same organism, they have no rough edges which must be fitted and no gaps to be filled in. Where there is no space-sensing organ, the space there is not a member of the empirical space system in the remotest sense. If, by compulsion of habit and language, we must speak of the consciousness system as being "somewhere," even when we do not mean that it is, *quâ* consciousness, a piece of some space group, it is permissible to say that the extensions between rods and cones are in a wholly different dimension from that in which the empirical spaces lie. Strictly, of course, this way of putting it is wrong; it becomes roughly accurate when "dimension" is construed as "determinant" or "mode of determination." A much less treacherous analogy is this: the intervening stretches of insensitive protoplasm are as impotent to interfere with the empirical spaces, or to hold the latter apart in discrete spots, as the interstellar ether is impotent to act as a screen against the pull of gravity between earth and sun. And, as there is no material screen for gravity between material objects, so too there is, from the beginning, no empirical screen—no gap or resisting medium—between empirical objects. Though the comparison is here offered only as a hint, it leads up to a most fruitful angle of contemplating psychic complexes; but of this another day. Now let it be taken as nothing more than a generalized, slightly amended reaffirmation of Professor James's well-defended thesis that "in the field of space the relations are facts of the same order with the facts they relate. If these latter be patches in the circle of vision, the former are certain other patches between them. . . . The relation of position between the top and bottom points of a vertical line is that line."[1]

If anybody chooses to translate this into some assertion about

[1] "Principles of Psychology," II., p. 149, etc.

the origin of spatial order being in "feelings of transition," let him do so; realists are still free to find in it a richer meaning, namely that the relations in which things stand are phases of the things themselves, somehow immanent in them; not that a single pure extension of the visual type, existing alone empirically, manifests a whole geometry of positional and direction relations; and not that such an extension is *nothing but* a complex of these relations. The peculiar isolation, or better, insulation of each consciousness assists us to illustrate, from a comparison with the whole physical universe, how neither of these opinions is implicated in the realistic interpretation of that immanence. Viewed from within, a mind knowing only one pure extension unit at a given moment would know it as a physicist knows the weight of the whole material universe. Without in any wise attenuating the nature or reality of matter, the physicist may say that the totality of gravitating things has no weight; for weight is a peculiar relation resulting from the spatial and structural differentiation of matter. It would not be true to say that the universe's weight equals the sums of the weights of all its parts; neither can it be maintained that weight is nothing but a relation, meaning thereby that individual "things in themselves" are quite as weightless as their totality. So too in the case of a creature whose only eye contains but one rod (unit organ). Size and position would have no meaning, provided, of course, that no other sense organs furnished other differentiated spaces. To tell such a creature that there might be two extensions, one larger than the other, or that a triangle is possible, would be as futile as to assure a man that greenness has a cube root, or that virtue is a pentagon. A blank contradiction lurks in the suggestions. And yet, ignorant of all spatial order, the creature might well experience vividly the pure outstretching that we catch with such difficulty at the fringe of vision. That outstretching would, to be sure, suffer no comparison with the physical expanse we call the visible universe; it would not be the abode of things and the scene of movements. It would either exist or not exist, and if colored, at most only temporally differentiated as to this character. And yet the peculiarity of extension would not have gone lost with this uttermost simplification. Now suppose the creature to grow another eye on the opposite side of its head, and again an eye having only one rod. Then, were the two extensions perceived in any manner together—*i. e.*, were they truly given as extensions and not as two genera, such as hue and noise—they would be given as adjacent without any act of synthesis, simply and solely by virtue of the fact that, being both extensions, they are distinct and simultaneous. The situation is, I maintain, absolutely the same, at bottom, as that given, if not as

a historical event, then as a logically conceivable one, when that phase of the universe which we call matter showed its first, its very first, inner differences. Weight, a phase of material differentiation, thereupon happened, but not as an event distinct from the cosmic rift; it *was* of the rift itself. So with the positional relation in the space of our microcosm; it is merely one aspect of the existence of two different empirical spaces, and for its creation we need no more and no less of a noumenal self or an *a priori* synthesis or an associative mechanism of local signs than for the establishment of the bare empirical extensions themselves.[2] But one heresy leans upon another; to the better defense of this first one, the second must be summoned.

2. The radical difference between visual spatial order and the *Gestaltsqualität* of other sense groups, particularly tones, has always been insisted upon by psychology. As spokesman for nearly all investigators, Professor James says:

> Let us take the case of an actual line of light none of whose parts is ideal. The feeling of the line is produced . . . when a multitude of retinal points are excited together, each of which, *when excited separately*, would give rise to *one* of the feelings called local signs. Each of these signs is the feeling of a small space. From their simultaneous arousal we might well suppose a feeling of larger space to result. But why is it necessary that *in* this larger spaciousness the sign *a* should appear always at one end of the line, *z* at the other, and *m* in the middle? . . . The more philosophic student . . . will reflect that it is conceivable that the partial factors might fuse into a larger space and yet not be located within it any more than a voice is *located* in a chorus. He will wonder how, after combining into the line, the points *can* become severally alive again; the separate puffs of a sirene no longer strike the ear after they have fused into a certain pitch of sound. He will recall the fact that when, after looking at things with one eye closed, we double, by opening the other eye, the number of retinal points affected, the new retinal sensations do not as a rule appear *alongside* of the old ones and additional to them, but merely make the old points seem larger and nearer.[3]

As books and books have been written on this subject without exhausting it, detail would here serve the critic ill. I shall therefore indicate certain broad facts which, if we cast off every habit of subjectivism and make earnest with the nativist's hypothesis that

[2] I am not denying the necessity of an elaborate mechanism for the development and control of visual spaces through all their changes of color and pattern from moment to moment; nor that of another mechanism for the relating of visual spaces to tactual, auditory, and motor. It were not heresy but madness to disown such. All that has been urged is against regarding continuity as their product. For aught that is here implied, all the particular arrangements of visual space may be determined in some degree by factors drawn from a dozen parts of the body, "associated" centrally, and "read into" the spaces of the eye.

[3] "Principles," II., p. 163, etc.

extensions are directly given, wipe out every essential difference between visual and other orders, reduce the whole phenomenon of form quality to an aspect of least perceptible difference, thus paving the way for the third heresy.

(*a*) For the realist, an extension is an outstretching and must always be treated as such, never—or only for certain special purposes—as a feeling, or a neural current, or a mode of energy. Two extensions are, therefore, two outstretchings. Different outstretchings are, just so far as different, two or more. And their difference is with respect to their outstretching, not with respect to color, or shape, or pleasantness, or vividness. All this is more than simple observation, it is pure definition of a fundamental empirical peculiarity. What, now, must an extension group be, if not a complex whose inner distinctions are distinctions of outstretching? So far as component extensions do fuse into one which is merely larger than its factors, they do not make a group at all, any more than five middle C's struck simultaneously on as many identical tuning-forks make a chord. Now, as a matter of fact, such fusion does occur in visual space; first, when an extension given through one eye is projected into one given through another—*i. e.,* in the case of corresponding retinal points; and secondly, when thousands of *minima visibilia* combine into a considerable line or area. The first instance is essentially identical with that of hearing the same tone with two ears instead of with one; the second with that of hearing a large number of tones simultaneously which, if heard individually and in sequence, would differ from one another in gradation by the least perceptible minimum of pitch, loudness, or timbre. I can not see a line or area as composed of as many minimal points as are actually involved in its making. Even if certain *minima* are marked by distinguishing colors or brightness, other retinal functions than those of space-sensing, notably contrast and after-imagery and central anesthesia during eye motion, obscure them. It might be going too far to say that these disturbers are to the *minima visibilia* what beats and difference tones are to minimally graduated simultaneous tones of a chord; but the likeness is profounder than psychologists seem to realize. In each case mere multitude involves new types of interrelating (from the physiological standpoint, fresh functions) which act as a mesh or veil thrown across the field of simple original units, or, in other cases, as a higher order of tension among the latter, pulling them into larger unit masses, much as gravity does with primitively differentiated matter. But what does all this signify as to the group character of an extension complex? Nothing more than that what is a distinct extension unit under certain conditions is not under others. There is in it absolutely no suggestion

that, by some hook or crook, a group of extensions might still be a true group after every distinction as to outstretching had disappeared from within it. As two tones giving only a larger (louder) are tonally identical, so two extensions which combine under circumstances that make of them only one outstretching are not a group or spatial order at all, but spatially identical under the given circumstances. To suppose extensions truly different to blend so as yet to be a true extension group or complex, although lacking all positional distinctions, is on a par with supposing five sounds, originally distinct as to pitch to differ, when given at once, not as to pitch at all, but only to produce a louder single tone and yet to constitute a chord. So stated, the mystery of spatial order reduces to a pure inner contradiction. The only other way of stating it is through the question: How is difference of extension possible *überhaupt?* But who cares to tackle that? It must now be clear that I am arguing not alone for the reality of extended things, not alone for the immediacy of the experience of extension, but also—and above all else—for the reality of extension as extension. If this be Cartesianism, make the most of it!

(*b*) The "philosophic student" who, wondering "how, after combining into a line, the points can become severally alive again," is disturbed by the fact that the separate puffs of a sirene no longer strike the ear after they have fused into a certain pitch, follows a will-o'-the-wisp down a side lane. Any comparison of this case with that of visual space order must do violence to one or the other, so various are their circumstances. The heard puffs of the sirene are not phases or qualities of the tone they produce; they are only effects of certain causes which, acting cumulatively, bring about the tone. This is not grouping into a simultaneous whole, but rather the massing of effects in a sequence. Its nearest analogue in visual space is not a line, but a color-point in the periphery, which becomes visible only when moved. The fleck at a given spot and instant corresponds to the single sirene puff; as the latter is not the tone, so too the fleck is neither of the hue nor of the shape of the moving point. And, conversely, as the separate puffs of the sirene no longer strike the ear as distinct effects after they have fused, so also the extensions traversed by the color are not distinct after the color has passed beyond them; otherwise we should sense, not a moving point, but a more or less homogeneously colored line. Only by repudiating every realistic hypothesis of empirical space at the outset can one find a difficulty here. Speaking of the visual elements, not as genuine extensions, but as feelings or local signs, a psychologist may fairly perplex himself; for mere feelings *in general* may synthesize in indefinitely many ways; forty retinal signs, as

signs in general, might, for aught any mortal wot, make a smell no less handily than a triangle. Let him be a nativist in psychology and a realist in philosophy, though, and then the ordering and massing of extensions, while not deducible from the nature of an isolated *minimum visible,* is pretty definitely limited by, and foreshadowed in, the latter.

(*c*) Simultaneous extensions, I say, must be outside of one another, if they are in any manner distinct as extensions. But this does not force upon realism the hypothesis of a "vaster sensible extent which can enter the mind simply and all at once" and which is a sort of receptacle or a breeding-ground for all the little spaces later discriminated. I have never understood why those psychologists who resort to such a device to explain space do not need a noise in general or an *a priori* uproar to make intelligible the distinguishing of simultaneous tones. Doubtless I shall be told that the history of mental development forces upon the psychologist the primitive space or the pre-empirical space-making faculty. It is precisely this necessity, though, which I do not see, from the realistic point of view. The psychologist's contention, as it interests us, is not that, as a matter of history, some "vaster sensible extent" has preceded the differentiated spaces in the conscious system; it is that, as a matter of logic, these later differentiated spaces can have become discrete only by virtue of such a preexisting general space, which is conceived as a sort of geometrical *tabula rasa* whereupon points, shapes, and distances may be drawn by the willing mind. For a thoroughgoing realist, this hypothesis is not demanded by the facts; taken literally, indeed, it turns upon itself, for if a small space can be sensed only through a prior larger one, why must not this latter, too, depend for recognition upon the good will and succor of a still bigger space, and so on as in the Hindu myth about the earth's supporters? I should not urge this a dialectician's argument against it, though, because the realistic interpretation of psychological evidences strikes harder and cleaner. That space is first a great blur and afterward a neat pattern need mean no more for psychology and metaphysics than the fact that on one side of a prism ether vibrations run together, and, but an infinitesimal fraction of a second later on the other side of the prism, they are dispersed in the spectral bands. The physicist does not argue that these bands could not exist without a previous mixed light; he regards the latter simply as an earlier condition which, through certain circumstances, passes over into, or is succeeded by, the dispersion. The change is not brought about by mixed light; mixed light is not necessary to the result, for the ether might conceivably be so disposed somewhere as to hold the

different wave-lengths apart from the very instant of their generation. This, at least, is a logical possibility. So, too, with spaces themselves; under some empirical circumstances they run together into one undifferentiated extension and under some others are discrete.

The most plausible conjecture about the psychologists who use the vaster space to make possible the lesser, inner kinds is that they have fallen between the two stools of realism and subjectivism. Thinking of seen spots as sensations, feelings, or local signs, they still can not or will not regard the spatial cosmos known to scientist and normal man as a mere fabrication of their respective nervous systems, and so they compromise by putting the sensations into the cosmic order. The result is the contradictory but seemingly realistic doctrine that the things we see are *in* the cosmic space, instead of *being* themselves that space. Whoever scents the dangers of such an interpretation will have no trouble in seeing that two extensions may "get into" an empirical system with no more ado or clap-trap than two sounds may. He will also understand that they are parts of a greater space only in the same sense that a tone in a chord is a part of a greater tone; and that the discontinuity of the radical realist's visual field (the aggregation of formless and boundless units) is as insignificant and as harmless as its true parallel in a tone complex, namely, the silent stretches between the component sounds. As the reader may not know what these silences are, just a word in explanation. Three notes, C, E, and G, let us say, are sounded together. C is felt as removed tonally several degrees from E. But the tones constituting these degrees are not sounded. They simply do not exist in the given empirical system. So, in one sense they are silent. But this does not mean that they are actually given as silences. For instance, I do not hear, somewhere or somehow in the chord CEG a break or a still interval. In other words, the tonal difference is not itself a tone; it is not even an unheard one. It is an immediate and immanent relation of the given tones, a relation that changes upon the introduction of fresh tones into the same system precisely as the introduction of an extra body into a system of gravitating bodies instantaneously shifts and alters the tensions throughout the whole system. What Professor James says of spatial relations holds true here; tonal distinctions are the distinct tones themselves, "facts of the same order with the facts they relate." Now, as the silent tones constituting the degree of difference between C and E, and E and G, do not, by their absence, fill the chord with silences, so, too, whatever extensions might be sensed, *under other circumstances* between two extensions given as adjacent and different, are not present *even as absent.* They are, to

revert to physics for an illustration again, no more important to the relation of given extensions than is a body completely removed from a closed gravitating system to the pulls within that system.

3. If these opinions can be held against all attacks of the subjectivists, the geometrical interpretation of so-called visual illusions and errors will be easy. Recall our imaginary animal with two eyes of as many rods; it might see something ten miles due north as adjacent to something as far due south of its head. The traditions of psychology and epistemology have it that this predicament makes nonsense of all realistic theory. The continuum manifestly has no objective existence; indeed, it does not even correspond to an outer adjacency. Be crassly realistic, however, and this discounting becomes invalid. The extensions which the animal sees are, for the realist, neither in space nor signs pointing to space, but the very spaces which geometers and physicists deal with. They meet, then, as physical and geometrical spaces do. When considering these latter, nobody finds it hard to comprehend how two lines may meet in a point, two planes in a line, or two solids in a plane. Because the meeting-place of two planes is much smaller than the planes that meet and, in a very real sense not of the same kind with the latter, being only a line, do we hear the geometer arguing that the meeting is illusory? Or, again, is this inferred on the ground that the infinitely greater part of each of the planes lies far away from the intersection and in opposite directions? Is this a reason for supposing that the line constructs the planes out of its own inwards? Or does the geometer assure us that, if the planes meet in this particular line, they must meet in every other? This is an unheard-of insanity in every mathematical and physical science, but popular, aye, even sanctified, in psychology, the native courage of whose infancy has been blighted by the yarns its Kantian nurses have told it. Not alone the hypothesis of non-spatial local signs, but, in a more deftly hidden manner, also the doctrine advanced by many realists that space is nothing but a sort of relation falls into these fallacies of the subjectivists, knee deep or up to the ears. The whole attempt of the epistemologists to explain how adjacent things in one's mind stand for, or are adjacent things outside of, mind springs from a pseudo-realism which, I fancy, is the mother of most idealisms and surely of some classical doctrines which have unfairly earned the name of natural realism. "If adjacent in the conscious system," runs its gospel, "then adjacent elsewhere; and if adjacent elsewhere, then adjacent in the conscious system." The trouble with this postulate is that it is far too radical and simple for common sense, too beautiful to be true. The natural realist, he who takes his world naturally, I mean, and not the philosopher who may happen

to have called himself by that name—is more modest with his hypothesis; he believes, as a working postulate, that it is the real world order, and the real things in it which he comes to know through experience, but not that the order as known or as immediately presented is in any strict sense a copy or duplicate of the order as existing independently of his private perceptions and thoughts. He much prefers the superficial paradox and the grave difficulties of this double position to either of the other two views in which the pseudo-realistic postulate brings up, namely, radical empiricism and objective idealism; and he prefers them because, though they press him hard, at least they do not mock his instincts and demand an elaborate mythology for their foundation. But the best warrant for his accepting some kind of a representative realism appears in the immediate success attending the strict application of such a theory to the apparent paradoxes of visual space, which have furnished almost the only meat on which anti-realism has fed since Democritus.

To describe and defend the changes which a thoroughly realistic interpretation of visual space must bring about in the representative theory carries us far beyond our present topic. A suggestion of them, though, may help to mark the drift and also to make clear how useful the geometrical handling of visual spaces robs all the hard-worked paradoxes of their sceptical import. Let us anticipate, then, the purged theory to the extent of saying that it will regard adjacent or intersecting extensions seen as "representing" objective extensions only in the manner that the line in which two planes intersect or the field in which two forces cross "represent" these planes or forces. As the line *is* both planes, and yet is but the smallest part or feature of each, so an empirical adjacency or intersection *is* the adjacent or intersecting things, though only a minute phase of them. And, again, as two points determine a line, or as three points not in the same line determine a plane, and so on, likewise with empirical spaces: though each of a group may be a most trivial part of a larger cosmic space, the group, if properly chosen, may express the nature of expanses forever beyond immediate perception. This may not be representationalism in any of its strict historical meanings; indeed, it repudiates all these theories which treat a sensation as either a miniature or a symbol of its cause. But a part-and-whole relation, a relation of condition, place, and function, for which I can find no fitter name than representation, is most decidedly involved in it, in a peculiar manner closely akin to the spirit of pragmatism. That such an interpretation, consistently developed, will preserve a genuine realism without a taint of subjectivism or Kantianism, and will at the same time keep the epistemological dualism

which the natural sciences demand, while casting off the pious brand, is not a forlorn hope.

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DISCUSSION

THE AFFILIATIONS OF PRAGMATISM

IT is not possible ever to read anything from the pen of Professor Lovejoy without being impressed both by that pleasantness and clearness in statement and that scholarly vision of historical continuity in philosophy which are his notable characteristics. The latter quality, especially, appeals to me, the more so as it is rare in these days of grubby detail in historical research and turgid "independence" in spontaneous insight. Contemporary controversy needs a little to be enlightened by a vision of the past, and a little to be sobered by a realization of the intimate nearness of intellectual movements apparently long since lapsed. It is, accordingly, a genuine service that Professor Lovejoy renders both to pragmatism and to realism in his suggestive treatment[1] of Professor Montague's investigation into their compatibility. It is, however, a service which has the defects of its virtues, inasmuch as history proceeds by mutations as well as by continuous alterations, and it is always easy, with our retrospective conceptualizing, to confuse the one with the other. What we already possess is so convenient and satisfactory a mould for the new material, so warm and intimate a light to see the strange thing by, that the temptation to envisage the fresh fact in the old concept is invincibly powerful, and not infrequently the ancient glamour serves rather to befog than illumine the novel discovery. Or it suffuses the latter only in part, perhaps its least significant part, leading one to think that what is so suffused is all that is. To be without the sanity of historical vision is certainly bad, but to allow its perspective to distort the new and unstoried object is worse. I can not help feeling that some such distortion is present in Professor Lovejoy's so lucid and interesting orientation of pragmatism and realism.

The pragmatic movement, Professor Lovejoy thinks, is a compound product—the union essentially of "instrumentalism" and "nominalism"—nominalism most of all. Pragmatism contains "the typically nominalistic motive—the simplifying, clarifying, *denkökonomische* motive; the typical nominalistic method—the definition of universals as collective names for particular items in experience;

[1] This JOURNAL, Vol. VI., pp. 575–580.

the typical nominalistic result—the rejection as negligible, if not demonstrably unreal, of all entities incapable of being brought within the compass of concrete experience." And this "nominalistic empiricism in epistemology has always made for idealism in metaphysics," inasmuch as idealism is "primarily an application of the law of parsimony to ontology." That pragmatism, therefore, "should incline to realism is surprising, . . . that it should imply realism indicates a paradox. . . ." The epistemological essence of the compound of nominalism and instrumentalism is the repudiation, Professor Lovejoy further holds, of the "correspondence" theory of truth and the substitution of "inter-temporal for trans-subjective reference, in its interpretation of the criteria alike of 'serviceableness' and of 'objective validity.'" But such "serviceableness" is "idealistic in its logical tendency" or leads to a "*tertium quid* distinct from dualistic realism of the ordinary sort." Inasmuch as the latter realism is Professor Montague's, and is "fully committed to the copy or duplication theory of knowledge," realism is *not,* in Professor Lovejoy's opinion, compatible with pragmatism.

It is not my purpose to take issue with this one opinion. The ambiguities and confusion of this orientation seem to me of such nature that it is rather my aim to present a substitute and somewhat opposed description of the general relationships of pragmatism, realism, and idealism. Idealism, like pragmatism and Christianity, is also capable of manipulation and uneven emphasis; so is realism. And it is, therefore, a pity that Professor Lovejoy did not further detail his notion of the idealistic implications of pragmatism. It is more a pity that he could not see his way to discussing, in connection with "nominalism," the "relational theory of consciousness," for if the former enters pragmatism at all, it enters, apparently, by that theory, yet seems in the light of that theory to be quite a different thing from medieval nominalism, or even nineteenth-century or Machian nominalism; and these two also contain significant differences which Professor Lovejoy has failed to note. It is to be hoped that we shall hear from Professor Lovejoy on both these matters. In the meantime, failing more elaborate treatment, I shall try to show (1) that the "nominalism" in pragmatism is different from historic nominalism; (2) that it commits pragmatism not to idealism but to realism; (3) that it is not incompatible with *epistemological* dualism.

1. The similarity of a nominalistic, idealistic, and pragmatic motive does not require much discussion. Tom Smith and a crow may both want to cross a river as quickly and as easily as possible; and Smith may swim across and the crow fly across without thereby either in process or intent implying or depending on each other.

Parsimony in intent can not be denied even crude dualism of the spirit-matter kind. And it is always to be remembered that the *facts* our "isms" deal with are approximately the same, and that the "isms" differ and supersede each other as realism, idealism, and pragmatism, *qua* methodological approaches to the control of them. They are additional in the world of facts—new ones, used to manage the older ones.

A more difficult point is the determination of the relations between pragmatism and historical nominalism. They turn, as Professor Lovejoy points out, upon the characterization of the universal. To the pure nominalist the universal seems, indeed, a "collective name" for particular items in experience. For pragmatism, however, just because pragmatism is "instrumentalistic" as well as "nominalistic" the universal has to be considerably more than such a mere *flatus vocis.* The "concept" *man,* to serve teleologically as Professor James shows it to be the function of universals to serve, must be just that identical and identifiable configuration of elements *discoverable in each man,* and serving as a standard of identification for all. In fact, the pragmatic doctrine of the universal may be construed as akin to medieval conceptualism. What is individual and particular is a complexity and thickening of the universal and general. The latter may be found anywhere, alone, or in groups, as the case may be, and is itself simple or complex. *Man,* for example, is a complex universal, and correspondingly *less* universal than *red,* or *point,* which are simples. Combine *man* with other "universals," such as *place, time, gravity, mass,* etc., and you get *a man:* the more the universals, the greater the particularity. If it be objected that *man* occurs in various places at the same time, I must reply that so does everything else. The problem offered by this repetition of identicals seems to me as false as the problem of the "ultimate" nature of being. The barren datum given us to start with is what it is and behaves as it behaves. The spontaneous fecundity of any element the mind once encounters—*man,* or *red, e. g.,* which causes it to reduplicate itself with infinite variety, is as common and familiar a fact as any known to philosophy or to daily life. That each instance of *red* should be the *same red* is not more inexplicable, nor more intelligible, than that red should be at all. It is the *red* that makes its sameness, not the moments of it. Now for pragmatism, it must be obvious to any one who has studied the pragmatic theory of knowledge on its merits, *red* can not be a "collective name" for particular *reds.* That a thing shall be *as it is known,* requires just this loyalty of a thing to itself, this "will-to-be" (if I may speak mythologically) of the knowable which makes us call it universal. Of course, there would be no "problem" and the world

would be infinitely easier to live in if there were only one of each kind of entity, *red, man, circle, centaur,* etc.; but nature seems to abhor uniqueness even more than the traditional vacuum and takes only an inebriate's interest in her favorite offspring, mankind. Pragmatically, it is enough that any one thing given in experience seems recoverable and identifiable over and over again. So identified and recovered, it is called "universal"; enumerated, it is called "particular"; but it is not a "collective name": it is just what it appears to be whenever, wherever, and however it appears. This being the case, no entity whatever is rejected in and for itself; no entity is found "unreal"—only *more* or *less* negligible, according to the different situations in which it occurs. And certainly nothing whatever is regarded "incapable of being brought within the confines of concrete experience." The latter phrase, indeed, seems to me of doubtful consistency, inasmuch as the very fact that an entity is known well enough to be given a positive epithet, would seem to bring it to that extent directly within the confines of experience, and, therefore, of "concrete experience," if by experience is meant the experience of any intelligible mind whatsoever. In "Does Consciousness Exist?" "A World of Pure Experience," and other similar papers, Professor James has, I should think, made this point sufficiently clear. I take it, indeed, to be the foremost presupposition of the "relational theory" of consciousness. And it *de facto* rules out historical nominalism. In truth, it cuts under the whole nominalistic-realistic controversy, by substituting for dualisms of substance and status, the pluralism of function, of the world of radical empiricism.

2. In such a world, is realism ruled out? On the contrary, that pragmatism implies ontological realism has seemed to me so clear as to render Professor Lovejoy's assertion that it implies idealism as much paradox to me as was Professor Montague's contrary one to him. Even if nominalism were really a chief demand in pragmatism, the idealistic implication would still be to seek. Idealism has two phases, historically related, but in no necessary logical dependence on each other. The first phase is epistemological idealism or subjectivism. Its essence is the doctrine that knowing is identical with creating, and that the reality of things is contingent on their being known. The ontological implication of such a theory of knowledge is notoriously a variety of the second phase of idealism—idealism as a doctrine of substance. By this variety the world is defined to be substantially the cognitive act of an absolute knower who as "subject," knows himself as "object," etc. It need only be mentioned how repugnant this sort of idealism is to the spirit of pragmatism—almost the whole pragmatic controversy consists of

refutations of it. There is, however, another form of the idealistic doctrine of substance, not based on the idealistic theory of knowledge, which is not intrinsically repugnant to pragmatism, but neither is it implied thereby. This form is pluralistic panpsychism—an ontological theory often mentioned with sympathy by Professor James. Its essence is the doctrine that the substance of the universe and the substance of our mental states are identical. But what is the substance of our mental states? Pragmatically taken, what is mind-stuff? It is *tree*-stuff, *man*-stuff, *of*-stuff, *but*-stuff, *centaur*-stuff, *God*-stuff, *horse*-stuff, etc. In short, the pragmatic essence of this doctrine is the observation that *tree* is *tree, man, man,* wherever they occur; that studied in *relation* to our bodily responses they are states-of-mind, and studied in *relation* to themselves and each other they are objects in the universal environment, while intrinsically they are—to use Dr. Sheffer's apt term—*neutrals.* Their proper status is not determined by their being known, but by themselves as they assume this or that relation. Such, if I understand it, is the philosophy of pure experience as expounded by Professor James, and if this is not realism, I do not know what is. It is not, indeed, the "traditional realism" which requires an absolutely irresolvable isolation of two opposed substances, but it is realism certainly in so far as it is repugnant to subjectivism or epistemological idealism, *i. e.,* the assertion that *esse* is *percepi.* There is a form of it which may involve, altogether superfluously, as does, I suspect, Professor Strong's mind-stuff philosophy, the complication that the *esse* of *each* thing is *percipere;* but even then, the metaphysical reality and substantial status of each thing is not affected, and the epistemological consequence is not subjectivism, but what Professor Strong has called substitutionalism. A thing the existence of which is identical with its acting cognitively is on a far more significant metaphysical level than a thing the existence of which is the derived function of a cognizing substance. To idealism the latter is all *unreality* and illusion; the former, the *sole* and *unique reality.* Eliminate the uniqueness, *i. e.,* absolutism and subjectivism, and you have a genuine pluralistic panpsychism and *imply genuine epistemological,* if not metaphysical, *realism.* For then the one and only thing a *cognitive act* can know is another *cognitive act,* its metaphysical peer, a reality by definition. Thus the panpsychistic hypothesis that things exist only in so far as they know is in no degree incompatible with realism and does in fact imply it. Certainly *men* exist only in so far as they know, and whether other things do is a matter for empirical verification. But actually, the fact that one kind of being is knowing does not preclude the number of the kind, nor does it imply

the unreality or non-being of other kinds, nor does it give them a "subjective" and hence unreal status. That is possible only when cognition and creation are identified.

3. Is pragmatism, by its theory of knowledge, committed to this identification? Or may it admit the kind of realistic dualism which Professor Montague asserts and Professor Lovejoy denies it to imply? What I have already said points, I think, to a negative answer to the first and an affirmative to the last question. The issues raised by Professor Lovejoy will, however, bear further examination. Their considerable plausibility rises, perhaps, from the "psychologism" of our leaders and their use of old terms for new things. It is, however, clear that any student may, as a matter of method, treat any portion of a complex without denying the existence of the rest of it; and if, of any of the elements in the "whole situation" which Dewey treats, James chooses only to deal with the relation of truth to its object, epistemologically, and Schiller the relation of belief to belief, psychologically, they are fully within their rights and in no sense thereby committed to anything outside the scope of their intent. The unfortunate ambiguity of their English is regrettable and one may agree with Professor Lovejoy that our "temporalistic way of thinking has its technical categories still to forge."[2] But because our way of thinking is temporalistic and our terminology not altogether professional, does it follow that we may not be "dualists" in epistemology? Professor James, indeed, asserts his dualism again and again.[3] On the other hand, because an idea is numerically different from its object, need it remain eternally so, and can they never fuse and coalesce, as might two numerically different drops of water, into a richer unit of the same kind? If not, why are not "image" and "object" simultaneously present in consciousness, two in number and status, to be compared or contrasted directly? But the majority of cases of "true knowing" are identically no more than just this "thickening," in time, of our ideas. What, *e. g.,* is the difference between conceptual *red* and actual *red* if not a difference in vividness, intensity, "thickness"—if not, *i. e.,* an additive difference? Do, however, the time-process and "temporal reference" exclude a *contemporaneous object,* external to the "idea" and therefore "trans-subjective," which may be temporally reached? No more than the sign-post excludes the contemporaneity of the thing it signifies. If the situation actually required such exclusion, the whole pragmatic account of meaning would, in some sense, lapse. For the

[2] Cf. the delightful article, "The Obsolescence of the Eternal," *Philosophical Review,* XVIII., 5, p. 501.

[3] Cf. "The Meaning of Truth," preface, pp. 41 (note), 47–50, 102–119, 215, 236, 291—in fact, it is repeated in almost every essay of the book.

"independence" of what is known from the "conscious experience of the knower" is one of its fundamental postulates. But such independence is understood by pragmatism according to the *requirements of reality,* not of *words.* Therefore, the independent object is independent and trans-subjective in the sense that it is *free to enter or leave* "conscious experience," but not in the completely agnostic and nihilistic sense that a mind may never directly encounter it at all. If Professor Montague means the latter relation to obtain between knowledge and its object, I agree that a pragmatist can never be a realist and should never be so silly as to want to be one. But it did not seem to me that Professor Montague meant that. What he did mean, I prefer, however, to let him say for himself. For pragmatism, the world is real, and *idea* and *object* are not single, but dual, because for pragmatism knowing is *not* creating. A dualistic epistemology can not be denied pragmatism because idea and object obviously *fuse* into one in every case of valid knowing. The two terms which pragmatism uses indicate that pragmatism holds them to be two. But one, *idea,* is an instrument, the other *object,* is the goal or subject of the instrument's function. That they may be and in most cases are partly, or even wholly, identical in quality and diverse in number, that the numerical diversity reduces itself to numerical unity in every case of true knowing, is the central fact which makes possible *representative* knowledge in any sense of that hard-used word. The business of the *idea* is to eliminate itself, bringing you face to face with its object or some one of the object's implications or associates. In that consists its representative power. To say that it never does so and never can, seems to me contrary to fact; to say that because it does so objects must be declared unreal and its functional difference from the object denied, seems worse than oversight of fact; it seems inadvertent perversion of fact for the accommodation of theory.

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PROFESSOR SANTAYANA AND IMMORTALITY

G. LOWES DICKINSON'S question "Is Immortality Desirable?," his own answer, and Professor Santayana's reply in this JOURNAL,[1] give an unusual opportunity for suggesting a point of view which does not seem to have been so far considered. From this standpoint we may gladly accept Professor Santayana's protest against a radically false ideal—fostered, if not created, by current linguistic usage—in the desire for *im*mortality.

[1] Vol. VI., p. 411.

It seems to me that our prevailing worship of the "not": the not-final (infinite), the not-mortal (immortal), and all the rest, is a symptom of unnoticed perversion in customary expression which tends to foster barren controversy and to defeat beforehand all positive solution. The prefixes "in-" and "im-," indeed, are indifferently used in the concentrative, and the negating, or subtracting, senses: and we little realize how much perplexity, discordance of ideal, fruitless discussion, even suicidal despair, is formented, if not created, by modes of expression of which this is only one among many examples which vitiate our inferences, by sub-suggestion of which we are unconscious. On the other hand, they tend, of course, to favor illusion which may become delirious obsession, too often take on a poetic or devout form which may "deceive the very elect," and must always tend to the waste of our capacity to discuss the ideal expressed by Professor Santayana as that of "continual perfection." That ideal implies that we, who in this life use, as well as possess, body and mind, should not allow our working ideal to sink below the constant to the ephemeral, but recognize and confess that the result or good of us, whether that of example or achievement, of direct service or indirect influence, can not be a mere casual incident "leaving no wrack" of effect behind, but is presumably an operative though secret witness to the undying reality of that which urges men to do, to dare, even to die for the right, the true, the good —the real.

But there is another danger lurking in the current preconceptions on the subject of "immortality." We are the unconscious victims of this permitted persistence of outworn or perverted expression, in an undetected confusion between authentic and originative identity, and personality or self. The present (prevailing) ideal of the permanence of a mere self which at best is a working means and medium of a cosmic *identicating* energy happily beyond our present resources of definition, "freezes" me also "to the marrow." "Individual perpetuity," like unchanging bodily or material preservation of what is significantly called a mummy, would belong to the non-living and at most be a travesty of life. Individual potency is but as an egg-shell to be broken, though indispensable to the yolk which in its turn is food for an inestimable, because living, ovum. And, moreover, the not-dividual gives us nothing. The negative prefix here again betrays the vacuity of mere denial, however useful in its proper context it may be.

We can not yet impartially estimate life, but we can at least abstain from using its astonishing offspring mind, and mind's prerogative, speech, to confuse, deform and degrade, while thinking to enrich, economize or reverence, its unique issue, articulate and logical

expression. See how idly content we are with our merely "infinite" ideals, and with our worship of an enthroned and despotic self—one of which, indeed, when it asserts itself in an octopian voracity, we have the grace to be ashamed and to repudiate as engendering selfishness or egotism—terms which are instinctively—and happily—always depreciative and sometimes contemptuous. Note the usage wherein we lightly confound I or we as the expression of an indefinable possessive identity, and my or our self, thus confessed as a property or possession, a temporary and modifiable entity which we insist on stereotyping as well as putting in the saddle—the most tyrannous of things—to ride us. Mixed metaphor seems excusable if not appropriate here. Where else do we so fatally confound the plain and elementary distinction between the *is* and the *has?* It may be hoped that we shall not much longer be content with an identity which rests on, or is the source of, a grammatical confusion between what we are and thus can not merely *have,* or have and thus can not fully *be.*

We may gladly, therefore, echo the protest against finding our own person again beyond the grave. As we say nowadays, it is not good enough. We praise, indeed, forms of unselfishness and sacrifice which are too often waste of beneficent capital, of a store laid up in us and bringing a hundredfold for all of us in each of us. We are liable to squander under ethical names personal resources which are here ours, "lent us" for intelligent and discriminative, economical as well as devoted and whole-hearted—service. Such an ennobling service we may well assume to be the contribution of the human factor to the cosmic whole, since science discovers no ultimate waste or vagary in the order of nature. There every form of order serves every other, and reveals itself to an ever-growing knowledge as inexorably consistent, while still making room for the spontaneity of life and its ever-increasing control—through loyalty to that order and consistency as the preconception of all worth or value —by an ideally dominating and even creative mind.

I would suggest that this confusion of the *is* and the *has* lies hidden at the root of Professor Santayana's condemnation of the cult or even toleration of pain, loss, grief, or privation, for their own sake. And "my own person" stands for our own self's cravings which we translate into an idolized "happiness," the wooden idol of *luckiness* set on a sacred throne of well-faring and well-being. The mayhap, what merely happens, thus glorified, is really at best but a wayside episode, never a final goal. And happiness is but the sum of such trivialities, or at most but the noonday interval of rest or play. It lacks the consecrating halo of blessing, even of joy.

It will be seen that I am here protesting against usages which

secretly and insidiously depreciate our most vital credit—that expression which should be the articulate offspring of normal and healthy experience, fruit of a conception corresponding in mind to that of a living organism. There is no fact reached in any laboratory faithfully used, which does not in some sense tend to disperse the perverted ignorance shirking full truth in optimism, or shutting down its light in pessimism. We live in a self-created world of halfness, and we endow with this the heavenly, the holy, world of wholeness. We are always splitting and sundering that which must never be confounded, but also must never be dismembered. Our instrument of expression is thus become discordant at its very source; and we little as yet realize the tremendous power, the coercive tyranny, which a stale, a deformed, a casual, or an overgrown language may, without our suspicion of its secret betrayals, exert.

There is but one way of realizing this power and of turning it into fertilizing instead of destructive channels. At long last we must recognize that the most precious as the most pregnant function we have is that of reading, testing, translating, applying—significance. Here also the experimental method is, in fact, the introduction to the power which shall significate all experience and all the worlds that crowd at its door clamoring for welcome and interpretation, and thus for the adult privilege of righting the warped ideas and couching the veiled eyes of man's still partly abortive mind.

Thus we shall no longer suppose nature to be "opaque and overwhelming," but find her actively forwarding conscious aims and "perfectly transparent"; worthy, indeed, of the sacred name of mother, and looking to her children to right the wrongs which deflect the pure currents of endeavor, and which at present we actually charge upon her; thus contradicting ourselves in making her an unnatural "mother." Then indeed we shall no longer represent, in Professor Santayana's pungent words, the effects of the "clumsy conjunction of an automaton with a ghost," but a divine marriage through which a new and holy world is to be born.

All this, I am ready to confess, has a sound of empty and risky rhetoric. And I should be the last to claim that I have given my thesis a worthy expression, even as now possible. But we shall all admit that apart from personal failing, symbols, in outliving their original relevance and implication, act as subtle poisoners instead of servers of our thought, and become the prolific sources of barren dialectic or of emotional wandering.

Once more, this fact plainly calls for a determined, vigorous, and reasoned effort to insure that language shall become to us—and still more to our children—at least as loyal a servant and as rich a mine as the splendid instruments, each surpassing the last, by which in

physical science we mechanically extend the limits of our sense-response, the borders of our knowledge, and our domination of our destiny. Neglecting this supreme need and treasure, we deserve to find life baffling and cruel, and even the instigator of a cynical or suicidal impulse which is the greatest and in fact the most extravagant of paradoxes.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Philosophy of Kant Explained. JOHN WATSON. Glasgow: James Maclehose and Sons. 1908. Pp. xi + 515.

This work consists of six parts: (1) an "Historical Retrospect," commentaries to (2) the "Critique of Pure Reason," (3) the "Metaphysic of Morality," (4) the "Critique of Practical Reason," and (5) the "Critique of Judgment," and (6) some "Supplementary Extracts from the Critique of Judgment." The "Historical Retrospect" is an exposition and criticism of the systems of those philosophers who came just before Kant and whose thought led up to the problems of the critical philosophy. The views of Descartes, Spinoza, Leibniz, Wolff, Locke, and Hume, are all discussed by way of an introduction to Kant's system. The commentaries to the three critiques and to the "Metaphysic of Morality" follow very closely, paragraph for paragraph, Watson's own volume on "The Philosophy of Kant as Contained in Extracts from his own Writings" (first published in 1888), each paragraph in the "Extracts" being explained in the commentaries. In only a few cases is any reference made to any part of Kant's writings not in the "Extracts." The "Supplementary Extracts from the Critique of Judgment" are simply intended as a supplement to "The Philosophy of Kant in Extracts." They include the "Analytic of the Beautiful," §§ 1–6, 8–13, 15, 18–21, the "Analytic of the Sublime," §§ 23–31, 36–38, and the "Dialectic of Aesthetic Judgment," §§ 56–57. They form a valuable addition to the earlier work.

Watson makes no attempt at criticism except in the "Historical Retrospect." In explaining the purpose of his book in the prefatory note, he says, these explanations of Kant "are not intended as a substitute for Kant's own words, but as a commentary upon them, though they will be found to contain a fairly complete account of his philosophy." They do not, however, form a commentary of the usual sort. Though the text of Kant is followed and each point is considered as it comes up as in most commentaries, there are few cross-references and few explanations by comparison with other parts of Kant. Each paragraph of the text is considered. In some cases there is little more than a lucid restatement of the paragraph in question; in other cases a more detailed account of the relations involved in Kant's thought is given. For instance, in regard to the *schema* Kant says, "In itself a schema is merely a product of

imagination; but, as in producing it imagination does not seek to set before itself an individual object of perception, but to produce unity in the general determination of sensibility, we must distinguish between the schema and the image. If I set down five points one after the other, thus . . . . . I have before me an image of the number five," etc. Watson's account runs as follows, "The schema is a product of the imagination, but a peculiar product of it, since the object which it produces is not individual but universal, or rather, it is not the production of an individual object, but a certain universal method of producing an individual object. If we set down five points one after the other, and combine them, we have before us an image, that is, a singular or individual object," etc. On the other hand, Watson gives us many explanations, like the following one about the *categorical imperative,* in which he does not follow Kant so closely. He says, "The reasoning by which Kant reaches his first formula of morality is substantially as follows. Man as a rational being is not subject to a law which determines his action in a purely mechanical way; on the contrary, his action presupposes the consciousness of a law which he may or may not obey. This law presents itself to him as an imperative, because he finds in himself certain natural desires, the claims of which to determine his action reason refuses to acknowledge. Thus the pure consciousness of self is bound up with the willing of a universal law. Hence the formula: 'Act as if the maxim from which you act were to become through your will a universal law of nature.' This does not mean that action is to be determined by a law of nature, but only that a law of nature is employed as the type or analogue of a free act; in other words, the law must have the universality and inviolability characteristic of a law of nature, but not its external necessity." This paragraph gives us a view of the *categorical imperative* at long range. But there are not many summaries of this sort in the book. Watson sticks generally very closely to Kant's text, and, like Kant, he develops the meaning of the thought by additions to and modifications of what he first states, but with very little attempt at giving a perspective of the critical philosophy as a whole.

The book is all clearly and concisely written. In reading it one almost feels as if one were reading Kant, except that the style is simpler and clearer. In thus making the critical philosophy easier to understand there is no dodging or running smoothly over difficulties. The work contains nothing superficial, and it is very well proportioned. The introduction to the "Critique of Pure Reason," which explains the purpose and problems of the critical philosophy, is exceptionally good, as also the metaphysical and transcendental expositions of space and time in the "Transcendental Esthetic," the part on the "Discovery of the Categories and the Deduction of the Categories" in the "Transcendental Analytic," and the section on "Transcendental Ideas" in the "Transcendental Dialectic." The relation of the three sections of the "Metaphysic of Morality" to each other and to the "Critique of Practical Reason," and the section on the "Deduction of the Principles of Pure Practical Reason" in the "Critique of Practical Reason" are very well explained.

Though Watson makes no attempt at criticism in his explanations, it may be asked whether he shows any tendency to interpret Kant according to any particular school of thought. In his prefatory note he says he is greatly indebted to Caird and Vaihinger. He has, of course, gotten many ideas from both of those thinkers, but their thought does not stand out in any marked way in his book, probably because he has avoided any explanations which could be regarded as criticisms. Caird's interpretation of Kant is largely from the standpoint of Hegel, but there is not a trace of the Hegelian point of view in this book. Watson brings out the realistic side of Kant by giving due weight to the *things-in-themselves.* On the other hand, he points out Kant's tendency to draw away from the *things-in-themselves* (p. 75) as his thought develops, thus bringing out the idealistic side. By explaining both deductions of the categories, the deductions of the first and second editions of the "Critique of Pure Reason," he admits that there is both a subjective or psychological side and an objective or logical side to Kant's philosophy. While admitting both sides (pp. 136–7), he points out that the logical side is the important one, just as Kant himself does. He follows very closely Kant's doctrine as well as his text, trying to give due consideration to every phase of his thought. Watson's own views as to the value of the Kantian philosophy are very successfully withheld.

One matter it seems necessary to mention. In "The Philosophy of Kant as Contained in Extracts from his own Writings" Watson translates the term *Anschauung* with *perception,* and he continues to use this translation of the term in the present work. This is misleading. Not only is the connotation of *perception* different from that of *Anschauung,* but if *perception* is used for *Anschauung,* there is no good term left with which to translate *Wahrnehmung. Perception* connotes some sort of connection with the senses, and therefore, while it may do very well for the *empirische Anschauung,* it is hardly good when applied to the *reine Anschauung* or the *intellektuelle Anschauung. Intuition* is by far the best English term to use, and it corresponds with the Latin term *intuitus* which Kant uses for it. *Pure intuition* can then be said to be neither a percept nor a concept, but to occupy a middle position between the two, being like the percept in its individual character and like the concept in its freedom from sense material. *Intuition* may seem to be a vague term, but so was the term *Anschauung* in Kant's day; *Anschauung* had very much the same connotation in German then as *intuition* has in English to-day. Better a term which is not very definite to which a definite meaning can be attached, than one with a definite meaning which does not render the meaning of the term accurately.

The book is one of great value, and will undoubtedly serve as a guide and a help to many, particularly to those who are reading Kant for the first time. Like "The Philosophy of Kant in Extracts" it is not intended for scholars or advanced students, though those who have already gone far in the study of Kant will be able to get many useful hints from it. But for the beginner who needs help in getting at the main thought in Kant's heavy paragraphs, it could not be better.

BRYN MAWR COLLEGE. M. PHILLIPS MASON.

Philosophische Strömungen der Gegenwart. Ludwig Stein. Stuttgart: Enke. 1908. Pp. xvi + 452.

Another book from Professor Stein, and a voluminous one! Moreover, this book, giving an account of the "philosophical currents of the present," is but the predecessor of a second volume to be devoted to the narrower field of "further philosophical currents, especially in France, England, and Italy." The quantity of the author's reading is stupendous, and equally remarkable are his energy, industry, and self-confidence. In fact, there is ample internal evidence to prove that the book was an easy task. The style is popular and vivacious, and most of the chapters are interesting. Enjoyable also is the frequent bewilderment as to whence you have come and whither you are going, as you read on from long paragraph to long paragraph. You remain care free even when you meet, as you often do, a line or two made up entirely of nouns in apposition, thought to be synonymous, but frequently linked only by some non-logical association. It may have been due to the reviewer's lack of insight, but it was not to his lack of sincere respect that most of the book reminded him of what Professor James writes regarding "total recall" in his chapter on association. Information is simply lavished upon the reader, varying in range from Greek philosophy to recent philosophical gossip.

The volume is divided into two parts, entitled, respectively, "Philosophical Currents of the Present" and "Philosophical Problems." The preface promises that we shall be given in the first part a critical account of ten philosophical movements that seem to the author characteristic of recent thought. A few of these ten chapters, however, are virtually biographical accounts of, or even panegyrics upon, some one philosopher.

The first three chapters are entitled, respectively, "The Neo-idealistic Movement," "The Neo-positivistic Movement (The Pragmatism of William James)," and "The New Philosophy of Nature (Wilhelm Ostwald's Energetics)."

Among the many men briefly noticed in the first chapter most attention is given to Riehl, Wundt, Külpe, Lipps, Windelband, Rickert, Stern, and especially to Münsterberg, who, he believes, has made his way fully from Fichte to Hegel. The author finds everywhere evidence that the history of philosophy moves in circles. There are a certain number of possible positions; and when these have been successively occupied, the philosopher of the new era must commence the old round anew. In fact, there are four chief types of problem and four thoroughly consistent solutions. The most influential and, at the present time, most powerful is the idealism of Plato. The second type is naturalism, whether pluralistic (Democritus and Hobbes) or monistic (Spinoza). The third is the organic-esthetic (Aristotle). Finally there is positivism, represented by Protagoras and Hume. Thus our author tells us that in neo-idealism we are returning to Plato, in pragmatism to Protagoras, to Socrates, and to the Stoics, and in energetics to Aristotle and to Leibniz.

A long chapter is devoted to pragmatism, in which is discussed the origin of the name, the pragmatic method, pragmatism's historical relations to Socrates, Protagoras, Aristotle, and the Stoics, to nominalism,

to Hume, to Mill, and to Kant, and, finally, the status of pragmatism as a form of voluntarism. His briefest summary is the following: "Gewiss ist der Pragmatismus erkenntnisstheoretisch Nominalismus, psychologisch Voluntarismus, naturphilosophisch Energismus (power to work), metaphysisch Agnostizismus, ethisch Meliorismus auf Grundlage des Bentham-Millschen Utilitarismus." To which should be added from a later sentence "Pragmatismus mit seiner genetischen Wahrheitstheorie entpuppt sich als logischer Evolutionismus."

The fourth chapter, of almost sixty pages, on the new romanticism is, perhaps, the most valuable of the ten constituting part one. After giving an historical sketch and psychological analysis of romanticism, the author writes a long and interesting account of the "Rassenromantik" of H. S. Chamberlain, whom he regards as the foremost *Neuromantiker*. The chapter ends with an excellent summary of Keyserling's recent book, "Das Gefüge der Welt."

The remaining chapters of part one are briefly the following: "The Neo-vitalistic Movement" (Driesch and Reinke); "The Neo-realistic Movement" (von Hartmann, also Franz Erhardt and Ludwig Busse); "The Evolutionistic Movement" (on Herbert Spencer and on the relation of his doctrines to those of Darwin, Carlyle, Spinoza, Comte, and German philosophers); "The Individualistic Movement" (Nietzsche and Stirner); "Die geisteswissenschaftliche Bewegung" (Dilthey's views and a panegyric upon him); lastly "Die philosophiegeschichtliche Bewegung" (Eduard Zeller, largely biographical).

It would be ungenerous indeed to complain of the complete neglect of men in England and France whose names are so familiar and whose influence is certainly international. Only the chapters on pragmatism and on Spencer deal with recent English philosophical literature.

The remaining six chapters forming part two are on philosophical problems of the present. Some of them seem most inadequate, whereas others have decided worth. To the former group belong the chapters entitled, "Das Erkenntnisproblem" and "Das religiöse Problem." The concluding four are more closely related to one another, and include problems that have been special subjects of study on the part of the author. The chapter entitled "Das soziologische Problem" contains an account of Lazarus's and Steinthal's work as founders of the *Völkerpsychologie* and a much fuller account and appreciation of the German sociologist Ratzenhofer and of the sociological doctrines of Herbert Spencer. The two following chapters, "Das Toleranzproblem" and "Das Autoritätsproblem," are the most valuable. The subject matter of these chapters is fully and connectedly analyzed and discussed. Tolerance and authority are defined and their origin, growth, function, stages, and fields are described. The title of the last chapter is "Das Problem der Geschichte."

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JOURNALS AND NEW BOOKS

THE AMERICAN JOURNAL OF PSYCHOLOGY. October, 1909. *Measurement of Attention* (pp. 473–529): L. R. GEISSLER. – A review of previous systematic and experimental methods, followed by an experimental study of the measurement in terms of clearness values in which was found: agreement between introspective and objective variations of attention; the estimate of the quality of work not as reliable as the evaluation of the degrees of attention; the possibility of establishing a differential clearness limen; the degree of concentration depends on the complexity of the simultaneous tasks and the preliminary instructions; there are the dual division and multilevel types of attentive consciousness. *An Experimental Study of Expectation* (pp. 530–569): W. H. PYLE. – A study of expectation of various kinds of stimuli, showing that the expectation is followed by a perception which is followed by kinesthetic and organic sensations and, at times, by verbal ideas; "expectation is a habituated consciousness"; the expectant consciousness is a preparatory, transitional state for a consciousness about to be. *A Bibliography of the Writings of Wilhelm Wundt:* E. B. TITCHENER and L. R. GEISSLER. *The International Congress of Psychology:* EDMUND B. HUEY. *Reviews:* Galton, *Memories of My Life:* TH. WALTERS. Centennial addresses, *Fifty Years of Darwinism:* P. E. WINTER. Munsterberg, *The Eternal Values:* M. W. WISEMAN. Dr. Carl Schwarze, *Herbert Spencer:* L. TURLEY. Ed. Claparède, *Psychologie de l'enfant et pedagogie expérimentale:* W. JENKINS. Perrier, *The Revival of Scholastic Philosophy in the Nineteenth Century:* S. POST. G. Lowes Dickenson, *Is Immortality Desirable?* F. JONES. Josiah Royce, *Race Questions, Provincialism, and Other American Problems:* J. RILEY. Dr. Stephen Maticevic, *Zur Bestimmung des Verhaltnisses Zwischen Logik und Psychologie:* F. JONES. Sir Lauder Brunton, *Therapeutics of the Circulation:* TH. WALTERS. R. L. Hartt, *The People at Play:* W. JENKINS. W. E. Leonard, *The Fragments of Empedocles:* W. JENKINS. *Book Notes.*

Braasch, A. H. *Die religiösen Strömungen der Gegenwart.* Liepzig: B. G. Teubner. 1909. Pp. 140.

Busse, L. *Die Weltanschauungen der grossen Philosophen der Neuzeit.* Leipzig: B. G. Teubner. 1909. Pp. vii + 156.

Claparède, Edward. *Rapport sur la terminologie psychique.* Extrait des comptes rendus de Congrès International de Psychologie, August, 1909. Genève: Secrétariat du Congrès. Pp. 14.

Claparède et W. Baade. *Recherches expérimentales sur quelques processus psychiques simples dans un cas d'hypnose.* Extrait des *Archives de Psychologie.* Tome VIII. July, 1909. Genève: Libraire Kündig. 1909.

Croce, Benedetto. *Esthetic as Science of Expression and General Linguistic.* Translated by Douglas Ainslie. London: The Macmillan Co. 1909. Pp. 402. $3.00 *net.*

Doan, Frank Carleton. *Religion and the Modern Mind, and Other Essays in Modernism.* Boston: Sherman, French, & Co. 1909. Pp. ix + 201. $1.10 *net.*

Farnsworth, Charles Hubert. *Education Through Music.* New York, Cincinnati, and Chicago: American Book Co. Pp. 208. $1.00.

Marshall, Henry Rutgers. *Consciousness.* New York: The Macmillan Co. 1909. Pp. xv + 685. $4.00 *net.*

Traité International de Psychologie Pathologique et de Thérapeutique des Maladies Mentales. Edited by Dr. A. Marie. Paris: Felix Alcan. 1909. Pp. viii + 1028.

Unold, J. *Aufgaben und Ziele des Menschenlebens.* Leipzig: B. G. Teubner. Pp. vi + 142.

NOTES AND NEWS

THE following notice is taken from the *Nation* for November 18, 1909: "A new edition is added to that magnificient *Sammelwerk* entitled 'Die Kultur der Gegenwart, ihre Entwicklung und ihre Ziele,' edited by Professor Paul Hinneberg and published by B. G. Teubner, of Leipzig, of Berlin (price, 14 Marks), is a solid tome of nearly six hundred pages entitled 'Allgemeine Geschichte der Philosophie,' and is probably the most comprehensive work of the kind in existence. It is the joint product of eight authorative savants. The introduction dealing with the beginnings of philosophy and the philosophy of primitive peoples, is from the pen of Professor Welhelm Wundt. Part I., 'Die Indische Philosophie' is the work of Professor Hermann Oldenberg; Part II., 'Islamic and Jewish Philosophy,' by Ignaz Goldziher, discusses the influence of this thought on the scholastic writers of the middle ages; Part III., 'The Philosophy of China,' by Dr. Wilhelm Grube, contains an unusual amount of new and hitherto inaccessible matter; Part IV., 'The Philosophy of Japan,' by Tetsujiro Inouye, can naturally claim unusual interest; Part V., discussing the philosophy of the Europe of antiquity, is by Dr. Hans von Arnim; Part VI., which treats of European philosophy in the middle ages, is by Professor Clemens Bäumker, and the seventh and final part is a discussion of modern philosophy by Dr. Wilhelm Windelbrand. Each part is subdivided into four or more heads, and has a bibliography. It would be hard to get more solid information and more suggestive data to the square inch than is to be found in this new history of philosophy."

SCIENCE for November publishes, under the heading "The Progress of Science," a discussion of the work of William Thomson, Lord Kelvin. The discussion was suggested, evidently, by the recent celebration of the hundredth anniversary of the birth of Charles Darwin, and immediately prompted by the publication in the *Proceedings* of the Royal Society of an account of the scientific work of Lord Kelvin, written by Sir Joseph Larmor. *Science* quotes from this account by Sir Larmor part of the address made by Lord Roseberry upon his succession to the office of

Chancellor of the University of Glasgow, previously held by Kelvin. "In my previous intercourse with Lord Kelvin," Lord Roseberry said in his installation address, "what struck me was his tenacity, his laboriousness, his indefatigable humility. In him was visible none of the superciliousness or scorn which sometimes embarrass the strongest intellects. Without condescension, he placed himself at once on a level with his companion. That has seemed to me a characteristic of such great men of science as I have chanced to meet. They are always face to face with the transcendent mysteries of nature. . . . Such labors produce a sublime calm, and it was that which seemed always to pervade Lord Kelvin. Surely in an age fertile in distinction, but not lavish of greatness, he was truly great."

GREAT regret is felt by all scholars for the death of Henry Charles Lea, whose distinguished and remarkable work in history was the culmination of a long life of activity as a scholar and as a publisher. Mr. Lea's serious historical work was not begun until after his sixtieth year. In 1888 appeared the "History of the Inquisition of the Middle Ages." "Chapters from the Religious History of Spain, Connected with the Spanish Inquisition" followed this in 1890; "A Formulary of the Papal Pententiary in the Thirteenth Century," appeared in 1892; "A History of Auricular Confession and Indulgences," in 1906; "The Moricos of Spain, Their Conversion and Expulsion," in 1901; "A History of the Inquisition of Spain," and "The Inquisition in the Spanish Dependencies," in 1908. Mr. Lea was active also as a worker in the problems of social reform. He was president of the Philadelphia branch of The American Science Association and also of the Reform Club. In 1892, he had a large share in the founding of the department of hygiene in the University of Pennsylvania, and erected for the department a laboratory. Mr. Lea died at the age of eighty-four years.

WE regret to record the death of William Torrey Harris, which occurred in Providence, Rhode Island, on the fifth of November. Dr. Harris was in his seventy-fifth year. Soon after his resignation from the office of United States Commissioner of Education (an office that he had held since 1889), Dr. Harris showed signs of a serious disturbance of his health, and his death was due to this difficulty. No one saw him in the last days of his illness without being struck anew by his calm strength, his benignity, and his constant mental activity. The JOURNAL hopes to publish soon an appreciation of his work.

WE note with regret the death of Dr. Hugh Blackburn, emeritus professor in mathematics at the University of Glasgow. Dr. Blackburn was, in 1849, appointed the successor at Glasgow of Professor James Thomson, the father of Lord Kelvin, and continued in that position until his retirement from active service in 1879. Dr. Blackburn died on October 9 at the age of eighty-six years.

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THE JOURNAL OF PHILOSOPHY
PSYCHOLOGY AND SCIENTIFIC METHODS

CONCERNING A PHILOSOPHICAL PLATFORM[1]

THE philosophical convictions of individuals as well as philosophy itself may be considered from the point of view of evolution. They are in a constant flux, changing sometimes slowly and imperceptibly, sometimes almost abruptly; and the apparently stationary elements may still be considered as changing with a speed approximating zero. However, to make this flux intelligible, we must break it up, we must make sections, that is, we must distinguish *definite stages* from which and toward which the evolution is conceived to take place; these stages will usually be points where more or less pronounced changes take place, or they may simply be determined by time-intervals. The apparently natural flux is, thus, more or less arbitrarily broken up into a number of points which indicate its flow, just as, in geometry, the arbitrarily chosen points indicate the curve. If evolution is the problem, it is clearly necessary to choose as many points in the development as possible, and the *continuum* must always be the ideal which we try to approximate. The discrete points are merely the scaffolding; they are, though necessary, purely auxiliary, to fix and comprehend the evolution.

We have become so embued with the spirit of evolution that we sometimes seem almost unable to treat things with any but its categories, to conceive it as the only "natural," the all-important "generating problem." Whilst, of course, no one dreams of denying its legitimacy and possibility, it is still important to urge that other points of view are possible, other "generating problems" to the solution of which evolution makes no contribution whatever. Such a point of view is *value,* and it is the decisive one if our philosophy is to become a basis for *action;* then this whole process of evolution may still be admitted, but is of no consequence; the views I hold now are, then, what concern me; I must "make up my mind," "make my

[1] Read, in part, at the meeting of the American Philosophical Association in Baltimore, 1908.

choice''; neither the ultimate philosophy, nor the absolutely best philosophy, but the best within reach, the best in so far forth, will be the determining one. Those definite stages, which were, from the point of view of evolution, though necessary, still purely auxiliary, are now the controlling idea. And this present stage of development in my philosophical convictions which shall form the basis of my present action must be the more definite, specific, and articulate, the more definite, specific, and articulate the conditions of my action are. Not that we always consciously formulate our convictions, but our actions commit us to certain convictions; we act, at least, *as if* we had them.

Now my thesis is that philosophy itself is called upon to act, and that therefore it is incumbent upon every age to make up its mind, to occupy and maintain some definite stage in this process of evolution that philosophy is undergoing, and not to use the idea of evolution as a convenient excuse for indefiniteness and absence of a doctrine and recognized school in philosophy.

That philosophy is, indeed, required to act I shall show in typical instances.[2] These are chosen from the realm of ''science,'' not because here alone they are to be found, nor even because they are the most important and urgent; theology and law make very definite demands upon philosophy. The reason is merely the personal one, that to me the philosophical needs of mathematics and natural science have been more pressing and immediate than those of the other disciplines.

Like most of you, who have not an own system to recommend and to defend, I have been dissatisfied with the philosophies that have come to my knowledge, living as a quiet student in the hope and quest of a world-view that would answer my needs. And, so far as my philosophy alone is concerned, what possibility is there but to patiently work and wait until the crystals form in the mother-lye? But the *social* function and duty of philosophy in the republic of

[2] In doing this I have sometimes felt as if I were carrying coals to Newcastle; the only question of real importance seemed: How can we make possible such a platform as this necessity for action demands? Still, it appears, in the light of the discussion at the Baltimore meeting (which Professor Creighton continues in his paper in this JOURNAL, supported by Professors Davies and Leighton), that to others such an agreement does not even seem *desirable;* but it will have to be admitted that, where there is a question of *necessity*, the desirability must be a neglected issue. The justified element in the aversion to a platform, which is expressed in this lack of desire for it, will, I think, be satisfied by the idea of "equivalent systems of philosophy," which I develop later in this paper. But if the opponents imagine that "agreement" means necessarily slavish adherence to the same system, I merely point to mathematics, where such agreement as I mean already exists compatible with that freedom which Georg Cantor, I believe, declared to be the "essence of mathematics."

knowledge was forcibly brought home to me by reading a book by Dr. Paul Dubois, of the University of Berne, on "The Psychic Treatment of Nervous Disorders." Not satisfied with merely giving a description of methods that he had found useful, the author seeks a philosophical foundation of his theory. And, indeed, complications with philosophy are unavoidable to any but mere routine and surface-workers! It is particularly the concept of moral responsibility that engages his attention. No one with any philosophical interest at all can have made even a superficial study of neurasthenia in any severe form without meeting this concept and its bearings at all times. The conviction of powerlessness seems the predominating feature of the disease, the inability of the patient to see and to accept what is perfectly clear to you, and, if you succeed in convincing him by repeating again and again the same argument in all possible variations and luckily striking the form that appeals to him, the inability, at least at the time, to carry it out in action; and all this in people who otherwise have shown clearness of mind and great strength of character. Now it is indeed of interest, but of no consequence here for us, who are not discussing moral freedom and responsibility, that Dr. Dubois most emphatically rejects this concept as contrary to all plain reason and unfit as a working hypothesis in his field; but it is of consequence to us that in his philosophical need the excellent author should have been left without any recognized doctrine of ethics to accept or to combat. Not that he failed to look around for information! But the case is typical. The other disciplines have to rely on the results that philosophy reaches; deep, original, and path-breaking minds are fully aware of this, but are thrown back on their own resources, their own reason, this "most precise instrument of work," as Dr. Dubois calls it, after a vain quest for definite results that could be used.[3] And what else can the scientist do so long as the workers in the various branches of philosophy are agreed neither as to the fundamental

[3] Both Professor Creighton and Professor Leighton deny the possibility or desirability of furnishing such definite results, and both deduce this definite result "from the very nature of philosophy." See this JOURNAL, Vol. VI., pp. 142 and 520. I must confess the cogency of their reasoning escapes me, particularly as both profess, on almost the same page, that a platform does already exist! Leaving, for the moment, the question of possibility aside, I ask: Do you mean to deny that it is incumbent upon philosophy to furnish some definite results in such a question as moral freedom? To be frank, I believe that at bottom we are really agreed on the necessity of supplying such definite results; but, overawed by the conceived enormity of the undertaking, we despair of its possibility and try to resign ourselves to the belief that, philosophy not being "one of the special sciences" (p. 142), "assured results" (p. 520) can not be expected of it. But I beg you to ponder the consequences of such resignation!

problems they set out to solve, nor in the solutions they offer, nor even in the ideal they strive to attain? Is the fundamental problem of ethics the description of so-called moral actions, or is it to find their cause in a so-called moral sense, is it to discover and establish moral values, an "*Umwertung der Werte,*" or is it the examination of the idea and of the principles of a possible pure will, or is it something quite different from any of these? Is the scientist supposed to take his choice according to what appeals to his reason? Or must it be admitted that the reason of the expert is the more precise instrument of work and ought to decide here, as it does in the other disciplines? And do we find any better agreement, if we ask: what is the fundamental problem of philosophy itself? And if we ask totally different questions, how can we expect agreement in the answers? But why accumulate instances, when we all are ready to admit[4] that no branch of philosophy has, in the republic of knowledge, performed the duty which is its part to fulfil.

But if no accepted solutions exist of questions, such as that of moral responsibility, which lie *completely within* the realm of philosophy, still less can we expect any agreement regarding problems *in the sciences themselves* that call for a philosophical solution. Take, for example, the work of modern mathematicians on the axioms of mathematics. I will not contend here that this would have to be considered as a philosophical question, if we assume that philosophy is "the science of first principles."[5] But consider: the geometers establish the axioms of geometry; the algebraists offer those best suited to their department. They find that, in either case, there is a choice among various sets and discuss their respective values according to definite principles. However, whilst it is, no doubt, important to keep the lines of demarcation between algebra and geometry, it is, on the other hand, undeniable that such mutual independence is true only in methodical abstraction, and that they not only interpenetrate each other in the application of one to the other, but that

[4] Nothing is more apt to prevent the proper solution of a problem than to imagine that it already *exists,* at least within the limits in which it is possible of attainment. This is the position of Professors Creighton and Leighton. However, one need only look through the papers read at the Congress of Arts and Sciences in St. Louis to be impressed by the uniformity with which the various speakers on philosophy give utterance to the necessity of coming to an agreement on the "definition" of "metaphysics," "logic," "ethics." Of course, there is *implicit* agreement; but such implicit, I almost said *instinctive,* agreement is not sufficient to base any reasoning upon; the agreement, to be serviceable in the various problems of which I mention types in the first part of my paper, must be *explicit, definite.*

[5] See Kant's remarks on this "definition" of philosophy in the "Critique of Pure Reason," p. 545 (academy edition, Vol. III.).

they have common hypotheses and concepts. And before we can, therefore, adopt a set of axioms as best suited to either department, it will be necessary to consider the sets in their relation to each other; and it may be necessary to adopt a set of axioms for mathematics itself, considered as a whole, which would be the best neither for algebra nor for geometry taken separately; the question of the axioms of mathematics, as distinguished from the axioms of algebra or geometry, presents itself. However, so far, it may be maintained, we are still in the realm of mathematics; let mathematicians take care of these axioms! But the connection of algebra of logic with algebra and even with geometry,[6] of mathematics with mechanics and physics and even metaphysics, demands consideration; and the whole question, as it deepens, widens until it bursts the bounds of any one special science; it becomes ultimately one of a group of problems to which the name "philosophical" has been vaguely attached.[7]

But no set of axioms is possible without a set of fundamental concepts. Mathematicians have, of late, come either to consider these fundamental concepts as defined by the axioms (as Hilbert and others), or to define them in terms of "logical" concepts, and to use these definitions in the place of axioms in building up their systems (as Dedekind has done). I will not dwell on the question of the relation of an axiom to a definition which is raised by these different procedures, and which seems to me eminently a philosophical question, the careful treatment of which would help to clear many points of method at present under discussion; but I will emphasize that these fundamental concepts, however supreme the importance of their treatment by the scientist, can not ultimately be chosen by any single discipline such as mathematics or mechanics; we know now that, so far as they are concerned, a choice is possible among various groups of fundamental concepts (though it is still an open question how far we are free to choose); and scientists will select those that work best in their realm; but the very ideal of cognition which the scientist is following pushes this question beyond the bounds of science to the problem of categories, which, in turn, must influence the choice of fundamental concepts in the special sciences. Besides, these fundamental concepts have their

[6] See Professor Royce's paper, in the *Transactions of the American Mathematical Society*, July, 1905, on "The Relation of the Principles of Logic to the Foundations of Geometry."

[7] As no generally accepted definition of "philosophy" exists, so far as I am aware, I shall, in claiming any group of problems to fall within the realm of philosophy, apply here, besides the usual meaning of the term, the negative test: *not* problem of any of the recognized special sciences.

realm, whose proper determination and consequent limitation requires a distinct (and we may call it a philosophical) investigation.

As a third problem arising within science that calls for a philosophical treatment I will mention the principles by which the scientist determines the value of the various possible sets of axioms. These principles, their establishment, examination, and methods of proof are so closely connected with purely logical considerations that fall outside the scope of any "scientific" department as to make them a proper province of philosophy. Still more will this be evident, if we consider that they define an *ideal* of science. For this ideal is in opposition to other ideals, and needs, therefore, an examination of its own value and competence. It may be, as some have claimed, a mistaken, or even impossible, ideal, it may be the only true ideal of cognition; in either case, the question can not be decided by the scientist himself any more than it can be decided without him and his labors.

Lastly, let me call attention to such questions as the *definition* of mathematics. This, surely, can not concern anybody but the mathematician himself, so it seems. And, indeed, if we merely want to collect the common characteristics of the recognized branches of mathematics into a *descriptive* definition (if I may use this expression), this may be so. And yet, even then, do we soon strike such questions as: Is arithmetic (and with it algebra and analysis) a part of logic, as Dedekind, Schröder, and others have maintained, or is logic (mathematical logic) a part of algebra, as Whitehead, Couturat, and others have treated it, or are logic and mathematics really one and the same, as Russell is inclined to think? But above all, how barren such a definition would be! A real definition must be a program of work; it must be systematic; mathematics would then be considered as a part of the whole system of cognition, a part with its definite function which can be properly assigned only by a consideration of the whole.

I have thus briefly indicated definite questions where philosophy is called upon to act; their answer presupposes a definite system of philosophy; and no one can, with an open mind, have followed the discussion on the principles of mathematics or of mechanics without noticing at every step, half hidden, half acknowledged, the philosophy of the system-building scientist. And how often are his efforts paralyzed because, after all, the philosophy is only *his* philosophy! But on which system shall he rest his work, if all is controversial? Shall it be left to the chances of a necessarily limited education and to his private opinion? And a mere outline, a general world-view, is not sufficient; the questions met with are definite, specific, articu-

late, and require a correspondingly definite, specific, and articulate philosophy; that is, they require a *system* of philosophy. How can it be provided?

In spite of the repeatedly emphasized differences between philosophy on the one hand, mathematics and the physical sciences on the other, it seems to be growing more and more apparent and recognized that they all cooperate on one general problem, namely, the establishment of a system of interrelations between the concepts necessary and sufficient for the solution of the various special problems which we set ourselves and for which the term "experience" stands. If we look thus at the so-called special sciences it must be to us in our distress a comfort to notice that mathematics and physics have already attained that steady progress and orderly procedure which make every honest piece of work a contribution, however modest, to the advancement of science. Their example which we need not imitate, may, nevertheless, be instructive. How is it possible that, with absolute freedom of research and opinion, order and uniformity in the department are maintained; how is it possible that, in spite of uncertainty on many points and dissension of opinion, a definite, recognized, and serviceable doctrine is maintained; how is it possible that, in spite of revolutionary discoveries, science is steadily moving on without losing the confidence placed in it? It certainly is possible. What can be done to reach this same condition in philosophy?

Few even of the mathematicians are quite clear about the changes in the appearance of geometry that would result from the adoption of one of the new sets of axioms that have been worked out of late, even if we consider only those that restrict themselves to Euclidean plane geometry. In mechanics, it may seem a trivial difference whether we take as fundamental concepts space, time, mass, and force, or only space, time, and mass, adding an hypothesis which shall be the equivalent of force; and yet, what a difference in the appearance of Newton's and Hertz's systems of mechanics! Such changes as the modern work on the foundations of mathematics and mechanics involve are nothing short of revolutionary! And yet, if the engineering student calls in the help of geometry, it is still Euclid's geometry that is offered him and that serves him; if he needs mechanics, it is Newton's system; in spite of the trenchant criticisms that have been leveled against Euclid's axioms, in spite of the doubts of the logical purity of Newton's system that troubled Heinrich Hertz! To be sure, the work of all these investigators is not done in vain; slowly and steadily mathematics and science will absorb their results. However, it will be a transformation, not a revolution; the good of the new will be blended with the good of the old, after the

alternatives have been weighed sufficiently. The momentum of the school acts like a fly-wheel to keep a science from erratic and premature changes. This steadiness is indispensable for making possible the serviceableness of science. We have shown in typical instances that philosophy also is called upon to act; it can not act without having a definite form which we must choose and maintain comparatively invariant. But a definite form of philosophy as such, not of individual convictions, means a recognized doctrine and school; or, if you please, a ruling party, which shall transact the business on hand, until it (which means its principles) is replaced by the opposition party, whose very existence and criticisms are necessary for a healthy growth and functioning of the ruling party itself. And I see no escape from the thought, reactionary or even ridiculous as it may seem, that we philosophers must, *for a start,* deliberately choose a system on which we are most ready to unite, not because it will fit any one of us exactly—none does but our own home-spun—but because we must have something definite, until we can, clearly and consciously, make the change to a new school-philosophy. The abolition of a recognized authority in philosophy by the renaissance, however we may be in sympathy with the new spirit, has been a decided disadvantage. We philosophers are too much possessed with the destroying instinct, though, in fact, we never do as much harm as we set out to do. Even the most original thinkers (such men as Kant, who appeared to his contemporaries supremely as the *Alleszermalmer*), how conservative after all, how much of the *perennis philosophia* in their thought and systems! The state of anarchy, which, in spite of the temporary successes of Descartes, Leibniz, Kant, and Hegel in establishing schools, is still prevailing, must end; this we all feel and the necessity for action demands it. Let us then learn this as a lesson from mathematics and science: to choose a system as authority with which we can start, which we can criticize, measure by certain ideals, change, mend, supplement or finally discard for a better, but all with due deliberation and for definite, specific reasons. For the promotion of such an end, the meetings and discussions of the Philosophical Association seem to offer a suitable opportunity.

However, such an agreement, even if possible, could only be considered as a starting-point demanded by the exigency. We must examine the authority, we said, improve it or discard it for a better system. Such systematic and persistent criticism is, indeed, the safety-valve which should prevent sudden revolutions; but it implies that we have an *ideal,* by which to measure the school-philosophy itself as well as our own efforts; otherwise, we can not know whether we are really advancing, *or even what an advance means.* And again, no vague ideal, such as we all more or less unconsciously carry

with us, will do for such definite work as is necessary; no mere hunting for contradictions—critique, systematic and according to well-established *principles,* is what we need here; these principles should completely define the ideal of philosophy; they may be conceived as *conditions* which systems of philosophy must satisfy. This implies, further, that definite methods should be developed by which we can test the satisfaction of our principles in any concrete case. Mathematicians and scientists have, during the past century, more and more completely defined their ideal.[8] The same should be done for philosophy, and the work already done by mathematicians will be of the greatest value. This ideal, set forth in definite conditions, with their tests, will be the instrument by means of which we, in submitting ourselves to the authority, work out our own independence and true originality.

These principles of "critique of cognition" will be directly applicable to systems of philosophy, if the latter can be given a special form, which I will call the "generating-problem-deductive-system" form, or more briefly the "complete-deductive" form. I shall explain what I mean by this, show, by an investigation of the conditions under which the transformation is possible, that any system of philosophy can be brought into this form, and indicate the advantages gained by this transformation; they cluster around the important concept of *"equivalent systems" of philosophy,* a concept, already familiar to mathematicians, which, if introduced into philosophy, will open up new fields of inquiry of the utmost importance for the idea of a philosophical platform.

The idea of a "deductive system" is familiar to all; its classic representative is Euclid's system of geometry. Its essential features are the definitions, the axioms (postulates, etc.), and the propositions which are "proved" by means of the axioms and definitions. These proofs consist mainly in the exhibition of the *interrelation* between propositions and axioms. The modern work on the foundations of mathematics has shown that the difference between proposition and axiom is not radical, that they may be interchanged (which change will, of course, produce different systems). We may therefore say: the deductive system exhibits the interrelation between the various propositions of the system. The system may be considered as a "tissue,"[9] which the deductive system presents in a polarized, or

[8] See my paper on "Critique of Cognition and Its Principles," this JOURNAL, Vol. VI., p. 281.

[9] See Mrs. Ladd Franklin's paper on "Histurgy," read before the American Philosophical Association in Baltimore, 1908; also Schröder's "Algebra der Logik," Vol. II., part 1, p. 55. Mrs. Franklin's paper should be consulted for the whole question of a philosophical platform. See the briefer form of Mrs. Franklin's paper in the "Proceedings of the Heidelberg Congress of Philosophy" for 1908.

directional, form. This form, artificial in that it makes fundamental the, otherwise irrelevant, *order* of the propositions, offers definite advantages, although they are not the ones which were expected by the originators of the form: they thought that by the "proofs" the "difficult propositions were made to participate in the clearness of the "self-evident" axioms.[10] It quite often happens, in mathematics, that the axiom is much less "self-evident" than the proposition which is proved by its assumption. The advantages seem to lie rather in this: (1) the deductive form is, thus far, the only one which really does completely exhibit the all-important interrelation between the various parts of the system, so that any assertion or denial becomes *more momentous,* so to say, by the consequences that we *know* are involved in it; (2) we can in this form most easily ascertain whether the propositions of the system *apply* in any particular realm, by merely investigating whether the "axioms" are applicable in the realm; (3) we can in this form best ascertain the *limits* of the applicability of the system (*i. e.,* determine the realm of the generating problem); and (4) we can most readily determine whether any two systems are *equivalent* or not. And this last advantage is the one I want to emphasize here.

But before entering into the question of equivalence, I will briefly state the necessary and sufficient condition which a system must satisfy so as to be transformable into this form. This condition follows immediately from the "definition" of a deductive system; it requires that the propositions of the system are *fixed, non-equivalent,* and *interrelated. And this condition any system of philosophy is supposed to satisfy; it can, therefore, be put into the deductive form.*

It remains to show briefly what is meant by the "generating problem" of a system. In the above account of the deductive form the axioms are said to be "assumed." This hypothetical character gives them an appearance of arbitrariness which in reality they do not have, as becomes clear if the system is considered as the *solution* of a *problem.* This problem, once stated and recognized, can be logically considered as generating the system; the axioms derive their necessity, not from any superior clearness or immediate evidence (which they, in mathematics at least, certainly and admittedly do not possess), but from the fact that they are necessary for the solution of the once accepted problem. Such a problem I have therefore called the "generating problem,"[11] to distinguish it from

[10] Plato, who ought to be considered the true originator of the form, did not fall into this error; the starting-point of his deductions is not the "self-evident" axiom, but the *hypothesis* which the interlocutors grant. Modern investigators are more Platonic in this respect than the early successors.

[11] See the aforementioned paper on "Critique of Cognition."

the "special problems" that are considered as logically underlying the special propositions. So we may consider as the generating problem of mechanics: "to deduce from the properties of material systems which are *independent* of time, their phenomena which occur *in* time, and their properties which depend *on* time." I take this statement from Heinrich Hertz's "Principien der Mechanik" merely on account of its clearness and articulateness. I can not dwell here on the advantages of thus conceiving a system; but it is clear that the definition of a science like mechanics can best be given in terms of its generating problem. And we can now conceive of a *system of problems,* in which each generating problem itself may play the rôle of a special problem. Such a system of problems would then determine a purely logical classification of sciences, and each special science would be the realm determined by its generating problem. It would greatly contribute to a mutual understanding amongst philosophers, if we could determine the generating problem of philosophy, or, at least, of its recognized branches. Indeed, this question or an equivalent of it will clearly have to be settled before we can define, by a group of conditions, either the scope or ideal of philosophy: it must be settled what we start out to do, when we develop a system; and what we start out to do, definitely and completely stated, will constitute the generating problem. In such a statement a great amount of freedom will be left; history will in part serve as a guide, but only in a comparatively small degree; for what has been considered the generating problem of a system may be extremely valuable as a hint, but need not necessarily constitute, or even be contained in, the true generating problem; questions of logical subordination will play an important part here; ultimately the systematic point of view will be decisive. Such specific and definite statement of the generating problems will result, I believe, in an increase in the number of recognized branches of philosophy and a consequent corresponding cessation of strife on fundamental questions.

So much, then, for the explanation of the term "complete-deductive-system." We are now prepared to state what is meant by "equivalence" of any two systems of philosophy. Let us call the two systems under investigation S_1 and S_2. They will be called equivalent, $S_1 = S_2$, if they satisfy the following conditions: (1) the generating problem of S_1 is contained in that of S_2, and *vice versa;* (2) the solution of the generating problem of S_1 can be deduced from that of S_2, and vice versa.[12] If, now, the system under investigation

[12] It is easy to notice that, in the language of my paper on "Critique of Cognition" this means that S_1 and S_2 have the same "completeness"; this is, indeed, here the important point of view; but, strictly speaking, this point of

is transformed into the "complete-deductive-system" form, we need merely to establish, besides the equivalence of their generating problems, the equivalence of their "axioms." If this is possible we can immediately assert: any special problem which can be solved in the realm of S_1 can also be solved by the "axioms" of S_2. The systems are "practically" (namely with respect to their conceivable consequences) the same—though they may be very different in structure and appearance. But for purposes of a philosophical platform any one system may be *replaced* by any other which is equivalent to it. The determination, whether any two systems are equivalent or not, becomes, therewith, itself a momentous question. Non-equivalent systems may then be considered from the point of view of exclusion or inclusion; non-equivalent systems may often be *made* equivalent by adding further conditions. But we can not here follow up these remarks any further, excepting to point out the effect this idea of a generating problem and of equivalent systems has on the study of the so-called history of philosophy, the importance of which Professor Creighton has urged in his paper on the question of a philosophical platform in this JOURNAL. The usual method emphasizes the point of view of evolution. This is of course itself a perfectly legitimate generating problem; but so far as the question of a philosophical platform is concerned—*i. e.*, the question which system we should accept as our system—this evolution history of philosophy is of no importance except incidentally. However, this mass of material which is represented by the philosophical systems of the past may be organized and made available for our question, if we treat it from the point of view of the generating problem. By this I mean: to make the paramount interest not the genesis of a system, its "history," the vestiges of the past and the germs of the future, but is purely *logical* content, by asking, What are the generating problems of the various systems and what their solutions; and are they, in spite of all apparent differences, equivalent with respect to completeness or not? Here is a broad field, almost untouched, of "historical" research of the utmost value to the "working" philosopher (if I may adopt a phrase often used by mathematicians), work which can be done by specialization in any one particular field, without presupposing an almost impossible amount of knowledge; and our "histories" of philosophy, in giving up a pretended breadth, would increase their depth immeasurably.

view should always be stated in any assertion of equivalence; we might, therefore, say that S_1 and S_2 in our definition are *equivalent with respect to completeness;* whilst by equivalence without specification we might mean that S_1 and S_2 satisfy *all* the conditions of "critique of cognition."

Having proceeded thus far in this formalistic direction, I can not but take a further step and urge the use of so-called symbolic logic which seems, until recently, to have had the luck of falling between the chairs of mathematics and logic, the mathematician spurning it as logic, the logician saving himself needless exertion because it was only "algebra." I will not insist on it here as an engine of invention, as a method of solving problems which are as inaccessible to common unaided reasoning (even if highly developed and drilled in our ordinary logic), as problems in algebra are to one who is master merely of arithmetic; but I will urge the advantages to be gained by the adoption of a precise means of expression, far superior to any *verbal* statement in exactness, simplicity, and lucidity.[13] To be sure, in "Algebra of Logic" we find again the same lack of agreement, the various schools clinging to their own special symbolism; this is, however, of smaller consequence and can largely be made harmless by proper "keys" to translate from one into the other. But the question whether "symbolic" logic should be used at all or not, ought to be fairly settled, not by clever writers unfamiliar with its first principles, but by the consensus of the competent. Generating problems and their solutions, transformed into the deductive form, stated in symbolic language and so made accessible to the same treatment which systems of principles of mathematics are receiving, how wonderful the possibilities!

Further methods could be made available, such as the "method of limitation and extension," "the hypothetical method." But more important, perhaps, than any suggestion of procedure is the replacing of the petty criticizing spirit prevailing among us philosophers by the mutual understanding of cooperation. As the problems become crystallized and purged of their antiquated, impure statements, as philosophers become more and more conscious of the true infinity of their special problems, and how often antagonism is really based on differences in the generating problems, philosophy will be developed as a system, not of individuals, but of humanity itself.

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PEQUAKET, N. H.

[13] Incidentally, I may call attention to Lüroth's remark in the posthumous edition of the second part of volume two of Schröder's "Algebra der Logik," that it is doubtful whether it will be possible to bring together the material for the second part of volume three, which was to treat of the *logical* side of the algebra of relatives.

CAN BINOCULAR RIVALRY BE SUPPRESSED BY PRACTISE?

ON page 280 in Charles S. Myers's "Text-book of Experimental Psychology," 1909, is the following statement under the heading of binocular rivalry:

> When corresponding points are stimulated by unlike stimuli, either combination or rivalry results. Colored squares of equal size and brightness may be combined without difficulty. The more the two presentations differ in contour or in brightness, or the more they are incongruous in general meaning, the more impossible becomes binocular combination. Instead of combining, the two impressions alternate, sometimes one, sometimes the other, occupying the field of consciousness. The field can be to a great extent limited to one or other eye by the control of attention or by the relative intensity or insistence of the sensations, either retinal or muscular, derived from the two eyes. *One of the images can be completely suppressed by practise.*[1]

The last statement in this quotation is so much at variance with the results which I have obtained in my experiments in binocular rivalry, that I venture to restate some of them. During the years 1898 and 1899 I carried on a series of experiments[2] in binocular rivalry and many of these experiments have been repeated at intervals during the last ten years, some of them within the last year. In every case I have found uniformity of results. The suppression of one of the images which Professor Myers speaks of as a fact in binocular rivalry was one of the problems in my experiments. The stimuli which I used in order to bring about the rivalry were red and green squares, ten millimeters in size. These squares were crossed by black diagonal lines. Upon the red field the direction of the lines was from the upper left-hand corner to the lower right-hand corner, while the lines upon the green field ran from the upper right-hand corner to the lower left-hand corner, so that when the fields were combined the lines crossed each other at right angles. A modification of the Brewster stereoscope was used for combining the fields. The first experiment was to determine whether the will was effective in suppressing one of the fluctuating images. I used nine subjects. In no single case was any subject able to control the rivalry to more than a very limited extent. No subject was able to reduce the number of rivalry phases which took place in any given time. The attempt to hold the red field, which was the field presented to the right eye, resulted in lengthening the time this field remained in consciousness by only 15 per cent., while the attempt to hold the green field, the field presented to the left eye, gave an

[1] Italics mine.

[2] Monograph Supplements, *Psychological Review*, Vol. III., No. 1.

inerease in time for this field of 16 per eent. That is, the subjects by will power could increase the length of time of the normal rivalry phase of either of the images by 15 to 16 per eent. This inerease was brought about by fixing the attention upon the image whieh the subject wished to hold in eonseiousness to the exclusion of the other image. None of the subjeets had had *extensive* praetise in attempting to suppress the rivalry. Some of them persisted through four or five sittings in their attempt to do so, but were unsueeessful. However, in my own case I have tried at different times during the last ten years to bring about the suppression of rivalry whieh Professor Myers reports as an established fact in his "Text Book of Experimental Psyehology."

This praetise in attempting to suppress one of the images has been earried on under many conditions. I have used a moving field for one eye with the field for the other eye at rest; fields of different areas; a field of figures opposed to one without figures; lights of different intensities for the two fields, and yet I have found no condition wherein one of the images ean be suppressed. I have found this to be true, however, with naïve subjeets: During the few minutes when the phenomenon of binoeular rivalry was first presented to them, they elaimed that they were able to hold one of the images in eonseiousness and to suppress the other, but such subjeets on further experienee, and more eareful observation, found that they were not able to do what at first they thought they had done.

Another form of experiment in binoeular rivalry has likewise been unsueeessful so far as suppression of one of the two rivalry images is eoneerned. I had eye-glasses prepared with red and green lenses. When these were adjusted only red light of a medium intensity entered the right eye, and only green light of the same intensity entered the left eye. The outer world then appeared to me alternately red and green, following the law of binoeular rivalry. I have worn these eye-glasses for days at a time, but the rivalry was never suppressed by this praetise. In this form of the experiment a possible error in observation might arise for the untrained observer, from the faet that shortly after the glasses are plaeed before the eyes, the sensations of eolor arising from the two differently eolored lenses run down to sueh a degree that it is diffieult to distinguish the ehanges of the rivalry because of the paleness of the alternating eolors. However, I have always been able to deteet the presenee of rivalry between the red and green fields under all conditions.

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AN ENGLISH EQUIVALENT OF "COMBINATIONS-METHODE"

THE recent death of Professor Ebbinghaus has again called my attention to the fact that it has become quite a habit among English-speaking psychologists to translate his "Combinationsmethode" of testing intellectual functions by "combination method" I wish to call attention to the fact that this is in no sense a translation of the term used by Ebbinghaus. The German words "Combination, combinieren," have all the meanings of the English words *combination* and *to combine;* but the German words have an additional meaning which in English is entirely lacking. An example may serve to make this clear. If we say in German that a man possesses "Combinationsgabe," this means that he has a talent for drawing conclusions from premises which do not very readily present themselves to a man's consciousness as items of a unitary logical thought, but which, *as soon as they are combined,* suggest the conclusion very forcefully. Now, the English word combination has no such meaning, and therefore, Combinationsgabe can not be translated talent for combination. That English-speaking psychologists have failed to notice this special meaning of the German word is easily understood; for the word is rarely used in this sense in literature, very frequently, however, in the ordinary conversation of the business man, the politician, the financier. Professor Ebbinghaus, being fond of impressive language, used the word in its conversational sense when he called his method of making the subject conjecture the words omitted from a text, the "Combinationsmethode." The English "combination method" is as little a translation of the German "Combinationsmethode" as the English "school knaves" would be a translation of the German "Schulknaben," that is, schoolboys. I have both in writing and orally used the term "conjectural method" as the equivalent of "Combinationsmethode"; and, since in my opinion this is the nearest approach in English to what Professor Ebbinghaus actually meant, I recommend its use to my fellow psychologists. He might have used in German, too, the phrase "Conjecturmethode," but, obviously, did not use this because it is rarely used in German outside the circles of the philologists, whereas the phrase "Combinationsmethode" immediately appeals to the public at large.

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REVIEWS AND ABSTRACTS OF LITERATURE

The Metaphysics of Nature. CARVETH READ. Second edition. London: Adam and Charles Black. 1908.

The second edition of Professor Read's book is distinguished by fifteen pages of appendices, on "Truth," "Consciousness," "Being," and "the Soul and Freedom." In other respects the edition is substantially the same as the first. The appendices are offered as clarification and further elaboration of the main doctrines of the book; but it must be confessed that they serve this purpose with but doubtful success. One would expect an essay on "Truth" to be vibrant with the searching discussion which has occurred during the past few years. Professor Read's appendix gives little hint that anything whatever has occurred since the days of Kant and Spencer. He reiterates his general conclusion, given on page 73 of the first edition, that "truth requires clear and distinct conceptions and judgments, cohering with reality, and harmonizing among themselves according to the analogy of experience: the reality with which true judgments must cohere is empirical reality, or human perception, their harmony is logical consistency and systematic coordination under the principle of causality." The very words are battle cries and alarms! It is true that Professor Read takes cognizance of present-day controversy by discussing the "copy-theory" of truth. Whether truth is a "copy" of reality, he says, "depends, in the first place, upon what is meant by "reality." If it means some possible mode of being that is not and can not be perceived, nor yet conceived from sensory data and in analogy with perception, we can not strictly be said to *know* of any such being, and, therefore, can not know whether any doctrine of ours is to copy it" (p. 357). This, however, is for him no ground for dismissing transcendent being, but simply for relegating it to "that background of belief out of which knowledge has been differentiated." Truth (and knowledge) therefore lies wholly within the sphere of empirical reality. Granted this, "the truth of perception is not a copy of [empirical reality], but, so far as perception is immediate sensation, it is reality itself. So far, however, as certain qualities of an object perceived are not immediately sensed but are subrepresented, such as the hardness of the rock which I see, the truth of perception depends upon a sort of 'copying,' or (as I prefer to say) correspondence, which may be verified by touching the rock" (p. 359). Further, truth is not simply a personal matter, but is one "in which generations have cooperated." Perception and conception, moreover, are in large measure symbolic.

Much of this is obviously true; but much of it is obscure, and more of it is questionable. Not to speak of its failure as a criterion of value-truths, and of the insufficiency of its vague empiricism, the view leaves us, at best, with the old static conception of truth and reality, yielding no clear word upon the problem which is, at the present time, pressing so hard for solution—the problem of "reality in the making." The essay is typical of the character of the whole book: it is distinctly not on the firing-line of philosophic thought.

A like inadequacy is betrayed in the attempt to elaborate the concept of consciousness. The author makes the surprising admission: "The term consciousness has a very conspicuous place in the *Metaphysics of Nature;* and friends have asked what I mean by it. It seems that I have nowhere tried to explain what consciousness is: having assumed, in fact, that everybody knows." The confession is frank; yet it is startling from a metaphysician who writes, with emphasis, "Consciousness is reality; is all we know of reality; is not a phenomenon," and who speaks as lightly and easily of "generic consciousness" as if it were a matter of every-day acceptance.

Although the author confesses himself to have been awakened from his dogmatic slumbers by Professor James's article, "Does Consciousness Exist?" one wonders how fully he has been aroused. His own definition is not reassuring: "Consciousness, then, is the totality of experience or awareness in the world, awareness of things, images, relations, feelings, however clear and distinct, or obscure and undifferentiated. There is no 'diaphaneity' about it; it is always actual, concrete, particular in itself (though its significance may be general). And consciousness is the best name for it: an undefinable name, of course; of which 'experience' and 'awareness,' though sometimes convenient substitutes, are not adequate synonyms. Consciousness has the greatest simplicity and universality of denotation" (p. 360).

Professor Read goes so far as to hold that consciousness is not a substance, but an activity, and to analyze consciousness into focal and marginal phases. In both cases, however, the discussion betrays a distressing lack of thoroughness of discussion and penetrating subtlety. The central position of the author deserves notice: "We should never speak of phenomena or any mode of experience as related to consciousness; for each phenomenon or experience, as far as it extends, is identical with consciousness. Consciousness is not definitely related to anything else; there is no positive term without it. All complete relations fall within consciousness" (p. 362).

Important, however, as this position is, it has not been defended with exhaustive care. This defect becomes particularly apparent when the reader is introduced to the culminating doctrine of the book, that transcendent being has two activities, consciousness and manifestation. Here it is imperative that the reader know the manner of the inclusiveness of consciousness and how this inclusiveness is related to the non-inclusiveness indicated in the statement: "Must we not attribute another activity to being whereby it is known objectively, besides the activity which is consciousness; and if so, must we not consider these activities as correlative?" (p. 368). This seems strangely at variance with the statement: "Consciousness is not definitely related to anything else; there is no positive term without it" (p. 362).

A graver difficulty lies in the assumption of generic consciousness. Professor Read disposes of a matter of the utmost significance with such inconclusive words as these: "In connection with this position, the conception of what I have called 'generic consciousness' (p. 332) seems to

me to have some interest for epistemology. It is admitted that we pass a good many months of infancy before we become distinctly aware of our individuality and personality, and that meanwhile we gradually become distinctly aware of things and the properties and movements of things around us. As persons we seem to be born into a world which pre-existed and is independent of us: it is not the work of self-consciousness. But it is the work of generic consciousness, without which being would not constitute an actual world. Generic consciousness, then, is the objectivity and necessity of nature in space and time, and all the categories are immanent there" (p. 364). It is impossible for the reviewer to criticize the last sentence, for he must confess that it is quite beyond his comprehension. And yet he feels that the author has something in mind that is of real importance.

The nerve of the book is its doctrine of transcendent being. In the text of the first edition, this doctrine was left in sad obscurity. The appendix attempts further elucidation. It turns out, however, to be little more than a recapitulation, which leaves the original difficulties really unsolved. "What is that thing in space which we all agree in perceiving, though it is a different perception for each of us? . . . We may most simply answer all these questions by supposing some condition of a phenomenon which needs, for the actuality of that phenomenon, that the conditions of a perceptual consciousness should be present. That condition I call being" (p. 365). "The criticism of 'being' shows that by itself it is necessarily empty. It can not be genuinely thought . . . but, by construction, being is an abstraction from consciousness . . . and it is only an indicative or orective category" (p. 366). Can we get any work out of this notion, he asks, in spite of its emptiness? "I propose to regard personal consciousness as a function, or activity, or (as it might be best to say) the actuality of that being of which the body is the phenomenon. Again, as we have seen that consciousness is a continuum without beginning, and that it may be supposed to accompany in some degree all phenomena, I propose to attribute it to the being of those phenomena. By that means we are able to think of the world as existing independently of us before we existed, inasmuch as its consciousness can be thought of by its resemblance to our own" (p. 366).

Being is further characterized as possessing the universal characteristics of the consciousness: "The argument is that (1) consciousness is reality, (2) that it is a factor of *all* reality, (3) that it is on a different level from the organism as a phenomenon, and that, therefore, we may transfer to being some of the attributes of consciousness, but not with equal confidence the attributes of phenomena, which are constructions in consciousness upon an otherwise unknown condition" (p. 367). But the inference that consciousness is more truly real than phenomena, is not justified in the argument. It rests upon the assumption that phenomena are *simply within* consciousness. Later, however, phenomena are held to be manifestations of being *correlative* with consciousness. So far as the argument goes, then, there is no reason to hold that consciousness is more truly real or more truly indicative of the nature of reality than

phenomena. The whole doctrine of transcendent being, in short, is developed with so little care that it can not be allowed to stand even as a plausible metaphysical hypothesis.

Criticism must be offered, too, of what is said of the continuity of consciousness, and of the "activity of manifestation." Neither in the original text nor in the appendix are these views clearly expounded. The same is true of the doctrine of *Allbeseelung*. This view, while central for the author, is scarcely more than outlined: certainly, its more serious difficulties are not even faced.

But the greatest defect of the book is its inadequate treatment of the concepts of time, space, and change. With regard to the new efforts to achieve a dynamic metaphysics the book really takes no stand. It is so largely concerned with the recapitulation of older views that it has neither time for nor interest in the newer developments of thought. One would suppose that a metaphysics of nature would at least take cognizance of such work as that of Mach, Ostwald, Pearson, Russell, Ward, Avenarius. If these men are mentioned at all—and some of the names do not even appear on the pages—it is only in swift passing, never in the serious effort to grapple with their views. In short, as a metaphysics of *nature*—so sadly needed—the book is far from being a success. With its ponderous effort to build up an empty hypothesis, it will serve as one more cause for scientists to smile at the vague futilities of philosophy.

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A Text-book of Psychology. Edward Bradford Titchener. Part I. New York: The Macmillan Company. 1909. Pp. xvi + 311. $1.50.

The scope of this book is indicated by the following quotation from the preface: "The present work has been written to take the place of my 'Outline of Psychology.' The 'Outline,' which was stereotyped in 1896, had long passed beyond the possibility of revision, and the continued demand for it showed that there was still room in the science for a text-book which set experimental methods and experimental results in the forefront of discussion." As compared with the "Outline," the present "Text-book" bids fair, when its second volume is added, to run to about twice the size. In regard to style, it has by no means, as the author had feared, lost any of "the freshness and vigor of the first writing." It is distinctly written for students rather than for the psychologist; the student and his needs are constantly borne in mind, and uncommon care is taken to interest him in the questions at issue before plunging him into the sea of psychological discussion.

The present volume covers the quality and intensity of sensation, feeling, and attention. There is also a brief chapter on synesthesia and the image.

The primary emphasis of the book is on the descriptive, or analytic, type of psychologizing—on the discovery of conscious elements and their manner of combination. But teachers who prefer to lay the emphasis elsewhere will be glad to see that the treatment is by no means one-sided

in this respect, since each chapter contains a careful study of the dependence of the conscious event on the stimulus and of its probable physiological interpretation. For example, the chapter on vision, which contains 34 pages as compared with six in the earlier work, owes its increased size mostly to the inclusion of such topics as contrast, adaptation, peripheral vision, color blindness, and the physiological theories of color vision; and the newer and older treatments of the other senses compare in much the same way. At the same time, much of the new matter is introspective; some of it consists of minute and yet graphic descriptions of particular sensory experiences. For example (p. 146): "If with the point of a pencil you brush one of the hairs that are sparsely scattered over the back of the hand, you obtain a weak sensation, of bright quality, which is somewhat ticklish, and which though thin and wiry yet has a definite body. . . . As the pressure [on the skin] is increased, the sensation too becomes heavier, more solid: at times it has about it something springy, tremulous, elastic; at times it appears simply as a little cylinder of compact pressure. Finally, at still higher intensities, the sensation becomes granular: it is as if you were pressing upon a small hard seed embedded in the substance of the skin. The granular sensation is often tinged with a faint ache, due to the admixture of a pain sensation; and is sometimes attended by a dull, diffuse sensation derived from the subcutaneous tissues."

Many changes in the subject-matter are due to the progress of the science; old conclusions have been abandoned, old theories modified. The author's method is to present the conclusions which seem to him the best at the present time; to admit that there is doubt as to their final validity, but not to worry the student with a maze of conflicting views and evidence. His judgment as to which conclusions have the best claim to be so presented will, probably, at most points, meet with general approval. In the chapter on "affection," he is frankly on controversial ground, and abandons to some extent his usual method, threshing out conflicting views with considerable labor. It is doubtful if the student can winnow enough grain from this chapter to pay for the labor. If the descriptive psychology of feeling must begin with the statement (p. 231) that "affection lacks the attribute of clearness," then it may as well end right at that point. If it is of the nature of feeling that "we can not attend to an affection at all; if we attempt to do so, the pleasantness or unpleasantness at once eludes us and disappears, and we find ourselves contemplating some obtrusive sensation or image which we had no desire to observe"—then the psychologist should take this fact to heart and devote his attention to something less inaccessible.

The chapter on attention also is debatable ground, but here there is much of undoubted value, regarding the conditions of attention, its development, range, duration, and accommodation. The purely descriptive psychology of the attentive consciousness, however, seems to reduce to the statements that attention is equivalent to clearness, and that there may simultaneously be present in consciousness parts that are clear and parts that are not clear. Now "clearness" must be admitted to be a figure of

speech, and the relevance of the figure is so far defined only negatively. Clearness is distinguished from intensity of sensation, since we can attend to a weak stimulus; it might also be distinguished from simplicity, since we can attend to a complex clang as well as to a pure tone; from distinctness or precision, since we can attend to an object in indirect vision to the neglect of the better-defined object in direct vision; and from any characteristic of sensation you please, since any one can either be or not be the object of attention. It would seem, further, that clearness can not be identified with prominence in consciousness, since the feelings, which can not be clear, can certainly be prominent. In short, the attempt to describe the consciousness of a moment as made up of the clear and the unclear leads to a curious paradox. For the fundamental distinction between the clear and the unclear can not be made in purely descriptive terms, and does not arise within any moment considered by itself. To reach a distinction between the clear and the unclear, each of them must receive some measure of attention; but the unclear is just that which is not attended to, and this precludes the making of the distinction. No one can say at any moment, "This I am attending to, while that I am not attending to." It would have to be, "That I was not attending to a moment ago," and the "that" would be an object, not an item of consciousness. The former item has been replaced by a new one; consciousness has changed, and in so far as the change is one in the distribution of clearness, it can only be defined by reference to the objects apprehended. Clearness, in relation to attention, can mean only clearness in the apprehension of objects, and the test of clearness can not be found in any one moment of consciousness. Attention offers no genuine problem to the descriptive psychologist; the questions which it raises are of a dynamic or of a physiological nature. In reality, it is to such questions that the bulk of the author's chapter on attention is devoted; the description of the attentive consciousness, though ostensibly the main purpose of the chapter, can easily be relegated to the background. All in all, with the probable exception of the chapter on feeling, the book can be used to good advantage by teachers of varying shades of opinion regarding the proper emphasis in psychology; and they will await the appearance of the second volume with unusual interest.

R. S. Woodworth.

Columbia University.

JOURNALS AND NEW BOOKS

ZEITSCHRIFT FUR PSYCHOLOGIE. Bd. 53, Heft 2 and 3, September 2, 1909. *Über die heterochrome Helligkeitsvergleichung* (pp. 113–179): Dr. Herbert Sidney Langfeld. – Direct heterochromatic brightness comparisons are possible and with practise yield constant results. The same color varies in apparent brightness with the "Einstellung" of the observer. Attention to color tone decreases brightness. With "Einstellung" toward brightness the usual order of yellow, orange, red, is reversed. Discussion of methods of color photometry with complete

bibliography. *Die hypnotische Beeinflussung der Farbenwornehmung und die Helmholtz'sche Theorie vom Simultankontrast* (pp. 179–206): MAX LEVY-SUBL. – (*a*) Through post-hypnotic suggestion the mental conditions demanded by the Helmholtz theory were produced. (*b*) While the physiological factors were influencing the visual apparatus the mental conditions were ruled out by suggested negative hallucination. (*c*) In no case was their evidence of the influence of the psychical factors required by the Helmholtz theory of simultaneous contrast. All facts point toward physiological explanation. *Zum Traumproblem* (pp. 206–224): SEMI MEYER. – Objections to the doctrine of the hallucinatory character of dream objects. The apparent hallucination of dreams reduced to the principle of the relativity of all psychical intensities. *Reviews:* R. R. Gurley, *Chapters for a Biological-empirical Psychology:* KOFFKA. W. Wirth, *Die Experimentelle Analyse der Bewusstseinsphänomene:* D. KATY. Richard Herbertz, *Bewusstsein und Unbewussters:* OESTERREICH. Ch. H. Judd, *The Doctrine of Attitudes:* LIPMANN. K. Brodmann, *Beiträge zur histologischen Lokalization der Grosshirnrinde:* KAPPERS. Horsley and Clarke, *The Structure and Functions of the Cerebellum Examined by a New Method:* KAPPERS. M. v. Rohr, *Abhandlung zur Geschichte des Stereoskops von Wheatstone, Brewster, Riddell, Helmholtz, Wenham, d'Almeida und Hormer:* KÖLLNER. E. B. Titchener, *A Demonstrational Color-Pyramid:* KOFFKA. A. Basler, *Über das Sehen von Bewegungen:* KÖLLNER. Ch. S. Meyers, *Some Observations on the Development of the Color Sense:* KÖLLNER. C. E. Ferree, *The Streaming Phenomena:* AALL. A. de Vries and M. F. Washburn, *A Study of Retinal Rivalry in the After Image:* KOFFKA. Diefendorf and Dodge, *An Experimental Study of the Ocular Reactions of the Insane from Photographic Records:* KÖLLNER. A. Pick, *Über Hyperästhesie der Peripherischen Retinaabschnitte:* UMPFENBACH. H. Beyer, *Studien über die sogenannten Schalleitungsapparat bei den Wirbeltieren und Betrachtungen über die Funktion des Schneckenfensters:* AUTORREFERAT. Bryant, *Die Schnecke und ihre verallgemeinerte Empfänglichkeit für Toneindrücke:* BEYER. Wojatschek, *Über einige paradoxe Fälle bei der funktionellen Prüfung des Labyrinthes:* BEYER. J. C. Bell, *The Effect of Suggestion upon the Reproduction of Triangles and of Point Distances:* AALL. Alrutz, *Är den s. K. sjoormen en illusion?* AALL. Lefevre, *Les echelons de l'intellectualité:* GIESSLER. T. P. Bailey, *Organic Sensation and Organism Feeling:* GROETHBUYSEN. E. Reinhard, *Der Ausdruck von Lust und Unlust in der Lyrik:* GROETHBUYSEN. Ch. Lalo, *Le nouveau sentimentalisme esthétique:* GROETHBUYSEN. E. Utitz, *Kritische Vorbemerkungen zur einer ästhetischen Farbenlehre:* PRANDTL. E. Utitz, *Gründzüge der Ästhetischen Farbenlehre:* PRANDTL. Rich. Müller-Freinfels, *Die Bedeutung des Ästhetischen für die Ethik:* KRIEBIG. G. C. Ferrari, *La psicologia degli scampati al terremoto di Messina:* ALLERS. D. Provenzali, *Il terremoto di Messina:* L. PORMEGGIANI. *A proposito del terremoto di Messina:* ALLERS. E. Moravcsik, *Über einzelne motorischen Erscheinungen Geisteskrancker:* UMPFENBACH. Beruh, Risch, *Über die phantastische Form des degenerativen Irreseins (Pseudologia phantastica):* UMPFEN-

BACH. Pierre Janet, *La perte des sentiments de valeur dans la depression mentale:* UMPFENBACH. M. C. Schuyten, *Over Broodopname bij Kinderen en de Jaarcurve der Levensenergie. Esthenometrische onderzoeknigen op volwossen leerlingen die een avoudcursus volgen. Linkshandigkeit der bovenste ledematen en verstandelijke boogte bij kinderen:* GIESSLER. R. Cousinet, *La Solidarité enfantine: étude de psychologie sociale:* GIESSLER. E. Siemmerling, *Über nervöse und psychische Störungen der Jugend:* WAGNER.

THE INTERNATIONAL JOURNAL OF ETHICS. October, 1909. *Meaning of Literature for Philosophy* (pp. 1–9): ERNEST ALBEE. – Literature is neither philosophy nor criticism, but a direct interpretation of life and, as such, well worthy of philosophic consideration. *The Unique Case of Socrates* (pp. 10–28): CHARLES M. BAKEWELL. – Socrates, asserting at once the individual and common nature of truth, was himself regarded as the living embodiment of that truth. *Knowledge and Practice* (pp. 29–47): J. E. CREIGHTON. – Philosophy becomes the guide of life when the desire for wisdom enters into mind as its dominant purpose, which necessarily expresses itself in the life of practise. *Religion and the Psychical Life* (pp. 48–62): EDWARD SCRIBNER AMES. – The religious nature is not something distinguishable and separable in any mechanical way, but is one of the functional selves. Faith and prayer are not uniquely religious, but fundamental characteristics of all conscious life. *The Organization of Truth* (pp. 63–71): JOHN W. BUCKHAM. – The organization of truth rests upon the central principle of personality. In order of value we have moral truth, practical truth, theoretical truth. These are not separate, but united in personality. *Ethics and Politics* (pp. 72–86): R. M. MACIVER. – There can be no theoretical conflict between ethics and politics, since the latter regards man simply as a member of political society while the former regards him in his concreteness as a human being. There may be a conflict between the public and individual conception of the good. *Religion and Morality* (pp. 87–92): H. W. WRIGHT. – Religion is the final step in self-organization by which man adjusts himself to the universe. His religious concepts are influenced by his moral status. *Discussion: Mr. Benn on Nietzsche:* an Explanation: H. L. STEWART and A. W. BENN. *Book Reviews:* Westermarck, *The Origin and Development of the Moral Ideas:* J. ELLIS MCTAGGART. G. Lowes Dickinson, *Justice and Liberty:* T. WHITTAKER. G. Lowes Dickinson, *Is Immortality Desirable?* J. E. CREIGHTON. Rufus M. Jones, *Studies in Mystical Religion:* NATHANIEL SCHMIDT. Chas. Elsee, *Neoplatonism in Relation to Christianity:* T. WHITTAKER. S. Schechter, *Some Aspects of Rabbinic Theology:* J. A. MONTGOMERY. Paul Carus, *God: An Enquiry into the Nature of Man's Highest Ideal:* NATHANIEL SCHMIDT. J. B. Pratt, *What is Pragmatism?* A. SCHINZ. John Morley, *Miscellanies:* G. P. GROCH. F. Paulsen, *Aus Meinen Leben:* FRANK THILLY.

Farnsworth, Charles Hubert. *Education Through Music.* New York, Cincinnati, and Chicago: The American Book Co. 1909. Pp. 208. $1.00.

Garrigou-Lagrange, Fr. R. *Le sens commun, la philosophie de l'être, et les formules dogmatique; Valeur de la critique moderniste des preuves Thomistes de l'existence de Dieu.* Paris: Gabriel Beauchesne & Cie. 1909. Pp. xxx + 311. 3 fr. 50.

Journals of Ralph Waldo Emerson, with Annotations. 1824–1832. Edited by Edward Waldo Emerson and Waldo Emerson Forbes. 2 Vols. Boston and New York: Houghton, Mifflin Co. The Riverside Press, Cambridge. 1909. Vol. I. *College.* Pp. xix + 394. $1.75 net. Vol. II. *Teacher and Divinity Student.* Pp. xvi + 542. $1.75 net.

Gamble, Eleanor McC. *Wellesley Studies in Psychology.* No. I. *A Study in Memorizing Various Materials by the Reconstruction Method.* Psychological Monograph, Vol. X., No. 4, September, 1909. Whole No. 43. *The Psychological Review.* Lancaster, Pa., and Baltimore, Md.: The Review Publishing Co. Pp. xii + 210.

Mignard, Dr. M. *La Joie passive: Étude de psychologie pathologique.* Préface de M. la Dr. G. Dumas. Paris: Félix Alcan. 1909. Pp. xii + 276. 4 fr.

NOTES AND NEWS

Early American Philosophers

The American Philosophical Association at its annual meeting in Baltimore, December 28, 1908, made an appropriation for the compilation of a bibliography of early American philosophy. It also recommended that a special committee should seek to forward the publication of the more important works of early American philosophers. As the beginning of a projected series the Columbia University Press was authorized to reprint, under the auspices of the association, the "Elementa Philosophica" of Samuel Johnson, first president of Kings College, New York, and a devoted and able disciple of Bishop George Berkeley. The expense of publication has been guaranteed by a friend of the university.

This generous undertaking has led the committee to draw up a tentative list of philosophical Americana, in the hope that other universities and colleges, and historical societies may help to put these and similar works in permanent and accessible form. As representing the philosophical speculations of the foremost colonial colleges the following works are suggested: At Harvard, the Dudleian Lectures (1750–1850); at Yale, selections from Jonathan Edwards (1703–1758); at Kings College, Samuel Johnson's "Elementa Philosophica," Philadelphia, 1752 (printed by Benjamin Franklin); at Princeton, President John Witherspoon's "Lectures on Moral Philosophy," Third Edition, Philadelphia, 1810; at the University of Pennsylvania, Benjamin Rush's "Diseases of the Mind," Philadelphia, 1812; at the University of Virginia, selections from Thomas Jefferson (1743–1826).

In authorizing the use of its name in connection with such works as the committee approve, the American Philosophical Association aims to encourage the publication of volumes of intrinsic and historical importance under competent editorial supervision, so that the writings and their authors may appear in their proper historical setting, and it is believed that the scheme proposed offers an unique opportunity to friends of the institutions concerned, to descendants of the authors, and to others interested to aid, at comparatively slight expense, in promoting the recognition due to our native American thinkers. The cooperation of those who are in sympathy with the enterprise is respectfully solicited.

I. Woodbridge Riley, Vassar College, acting chairman; H. N. Gardiner, Smith College; Josiah Royce, Harvard University; E. L. Becelaere, Convent of the Visitation, Georgetown, Kentucky; A. L. Jones, Columbia University; F. J. E. Woodbridge, Columbia University; J. E. Creighton, Cornell University.

Committee.

POUGHKEEPSIE, N. Y., December, 1909.

THE following note is taken from the *Athenæum* for November 27: "M. Lucien Poincaré, writing in 1906, pointed out that the length of the terrestrial arc, of which the Standard Metre is supposed to be the ten-millionth part, is longer than it was estimated to be when the standard was adopted; and that therefore this standard, although a miracle of precision in its day, is not now an absolutely trustworthy measure of length. At the same time he drew attention to the fact that an invariable measure of length is to our hand in the distance covered by a given radiation during one vibration, and he thought that a day might come when very small distances between given points might be measured in terms of wave-lengths of light. This prediction, which can be found in M. Poincaré's 'La Physique moderne, son Evolution,' translated into English two years ago, has now been realized in the Wave-Length Comparator of Dr. A. E. H. Tutton, of which an account is given in the current *Proceedings* of the Royal Society, and at greater length in the *Philosophical Transactions* of the same body. The principle of the new comparator is that of the author's interferometer, its essential feature being that one of the two microscopes employed to focus the two defining lines on a standard bar carries, just above the objective, one of the two glass plates of the interference apparatus, which reflect the monochromatic light (hydrogen or cadmium red radiation) thus made to interfere and produce rectilinear dark bands. It is proposed to use the device for producing copies, as nearly accurate as may be, of the Imperial Standard Yard, and some idea of its delicacy may be judged from the fact that a single wave-length of red light is roughly the forty-thousandth part of an inch, and that readings on polished speculum metal of this incredible minuteness have actually been made by Mr. J. H. Grayson of Melbourne for use with the apparatus."

THE following summary of the paper read before the Aristotelian Society by its president, Mr. S. Alexander, at the meeting on November 1, is from the *Athenæum* for November 13. The paper "continued the inquiry that occupied his address of last year, and developed an alternative doctrine to that of Mr. Stout given in the last paper of the recent volume of *Proceedings*. The paper dealt chiefly with images, of which the author endeavored to explain the physical character, declaring them to be different physical appearances of the same thing as appeared also in perception. Imagination brings us in face of physical objects as perception does, only that in the latter case the act of consciousness is evoked by the direct action of the thing on the sense organs, while in the former case it is evoked indirectly by some internal cause. But the appropriate mental attitude being attained, the object is equally revealed. The paper went on to show how upon this view the mind contributed to the our known world, not by adding interpretations from itself, but by bringing into view supplementary appearances of the object. Hence the real nature of things could be learnt from the combined testimony of different minds, which all of them observed different aspects of the same thing. When error took place, it was due to interference from the mind which dislocated the appearances of things, referring them to each other in false connections. The paper also dealt with the difficulties of the position that sensed appearances are physical, and with the metaphysical relations of sensations, perceptions, images, and thoughts."

THE subject selected by the American Philosophical Association for discussion at the meeting to be held in New Haven, December 27–29, is: The Problem of Time in its Relation to Present Tendencies in Philosophy. In order to define more exactly the question at issue, it has been suggested that members intending to take part in the discussion keep in mind the following references: Royce, "The World and the Individual," Vol. II., pp. 109–151; McTaggart, "The Unreality of Time," *Mind,* 1908; "The Relation of Time and Eternity," *Mind,* 1909; Lovejoy, "The Obselescence of the Eternal," *Philosophical Review,* 1909; Bergson, "L'évolution créatrice," Chapters I. and IV.; James, "A Pluralistic Universe."

THE secretary of the association, Professor Frank Thilly, makes also the following announcement: The Trunk Line Association and New England Passenger Association will allow stop-over privileges at New Haven, Conn., on the outward trip, from December 27 to 29 inclusive, for persons holding tickets reading via that point to Boston in connection with certificates issued on account of the meeting of the American Association for the Advancement of Science, in order to enable them to attend the meeting of the American Philosophical Association, to be held at New Haven, Conn., December 27–29. A reduction of fare is made only to persons holding tickets to Boston, who are members of the American Psychological Association or the American Association for the Advancement of Science.

FORTY-SEVEN Chinese students have come to this country to enter different colleges at the expense of the Chinese government. They will be

followed next year by 153 students, and the 200 students will be educated in this country with the indemnity growing out of the Boxer troubles and returned by our government to China. The whole sum will be devoted to educational work. Students will be sent to from China after earning appointments by competitive examinations. Each student is to study five years in American schools. The students are in charge of Tong Kwoh On, of the Chinese Foreign Office, a graduate of Yale University.

THE first number of the *Journal of Educational Psychology* is promised for January, 1910. The editors are W. C. Bagley, of the University of Illinois; J. Carleton Bell, of the Brooklyn Training School for Teachers; C. E. Seashore, of the State University of Iowa, and Guy Montrose Whipple, of Cornell University. The editors will have the assistance of a staff of thirty-eight collaborators.

PROFESSOR JOSEPH JASTROW, of the department of psychology in the University of Wisconsin, has been appointed by the trustees of Columbia University to give graduate courses in psychology in that institution during the second semester of this year, and to deliver a series of eight public lectures.

PROFESSOR E. MEUMENN, of the University of Münster, has been appointed to fill the chair at Halle left vacant by the death of Professor Ebbinghaus. The editorship of the *Zeitschrift für Psychologie,* formerly held by Professor Ebbinghaus, has fallen to Professor F. Schaumann, of Zurich.

DR. G. P. ADAMS, instructor in philosophy at the University of California, has been appointed adjunct professor in that university, and Dr. De Witt Parker has been called from Harvard University to become instructor in philosophy at Berkeley.

THE Southern Society for Philosophy and Psychology will hold its fifth annual meeting at Charlotte, North Carolina, on December 28 and the following days, in affiliation with the Southern Educational Association.

DR. B. ERDMANN, professor in philosophy at the University at Bonn, has been appointed to succeed Professor Paulsen in the chair of philosophy and pedagogy at the University of Berlin.

THE University of Leipzig in its recent celebration conferred upon Dr. James Ward, professor in philosophy at the University of Cambridge, the degree of Doctor of Philosophy.

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The Journal of Philosophy
Psychology and Scientific Methods

WILLIAM TORREY HARRIS

LEAVING to professional pens all attempt at serious exposition or criticism of the philosophy or psychology of Dr. Harris, I may perhaps be permitted to present some observations on his purposes, methods, and results as I have apprehended them, and which I hope may prove of helpful significance. I am confident that a true and comprehensive estimate of Dr. Harris would ascribe to him greatness in many spheres and preeminence in those of philosophic thought and the love and service of humanity. Doubtless at the present moment his name is, in the public mind, most associated with the cause of education, in which for so many years he has been our undisputed leader and master. To an actually great number of persons now living he has been not only intellectual leader but personal friend.

So long as the generation that knew him remains, this impression of him will abide, to be preserved longer, however, only by tradition, assisted by some inspired and comprehensive life of him, if such may be written. Clearly remembered or not, however, his work for education will continue in ever-widening influence for good, but I am persuaded that he will be forever remembered for his work in philosophy. It has been truly said that "it is granted to few to master the insight of the ages, and to still fewer to add to it." I think it is certain that both these distinctions are his.

Dr. Harris himself, in considering the means by which he had been able to accomplish what he had done, was always insistent that it had been due to no greater natural endowment than that of other men, but to the fact that he was early, and most fortunately, led to the study of the profoundest and most practical philosophy, and it is true that in all his biographical writings and personal references to his own career he constantly maintained this view. Hence it is that of all profound and successful thinkers his work constitutes the greatest encouragement for the student. Seeing clearly that there

can be no rational question to which there is not a rational answer, and one in its nature ultimately attainable by the same intellect that asks the question, that the world is a world of reason and amenable in its every phase to rational interrogation, he devoted his life to the study of the deepest possible problems of philosophy, the "science of the sciences," the "science of presuppositions." He was certain that comprehension of the essential nature of thought in its deepest implications and significance would give the right method of approach to the deepest problems and the power to detect error in method and result. This conviction was the spur to his persistent study of Kant and Hegel and Aristotle and Plato, the giants of the world of thought. In Hegel he found the thought that unites ancient and modern thinking.

In the preface to that greatest of all American books, his critical exposition of Hegel's "Logic"—a book which from the nature of the case is read by but a few of the most persistent students of philosophy, and whose existence is of course altogether unknown to most men—he is at great pains to give the essential points of his intellectual biography. This is for the immortal encouragement of those who essay to tread the steep and arduous path of pure thought. Nothing can so illustrate or further this his purpose as his own words, from which I make brief quotation.

"I struggled for a long time," he says, "with the preliminary question; how to convey to a neophyte an idea of the province of such a system of 'pure thought'; how, in short, to demonstrate the necessary existence of 'pure thought' and show its significance in solving all problems. Such 'pure thought,' could one demonstrate its existence as an element in all great problems, would furnish the formulæ for the solution of all questions. Once master of the general solution, one can solve the practical questions that fall under it.

"As early as 1858, I obtained my first insight into this philosophy, in studying Kant's 'Critique of Pure Reason.' I saw that time and space presuppose reason as their original condition, and that they are themselves the logical condition of what is in the world. Man, in so far as he is conscious reason, therefore transcends the world of time and space, and is an immortal being, and possesses transcendental freedom also, inasmuch as he is not conditioned essentially by the world,—not essentially, but only in the expression or manifestation of his will, which expression he may altogether withhold. I saw also the necessity of the logical inference that the unity of time and space presupposes one absolute reason. God, freedom and immortality have, therefore, seemed to me to be demonstrable ever since the December evening in 1858, when I obtained my

first insight into the true inference from Kant's 'Transcendental Æsthetic.'

"In 1859 I worked out my refutation of Sir William Hamilton's law of the conditioned by proving the infinitude of space and showing that the supposed antimony rests on confounding mental pictures with pure thought. The unpicturability of infinite space does not contradict its infinitude but confirms it.

"In 1863 I arrived at the insight . . . which I called, and still call, 'independent being.' . . . I discovered afterwards that is the most important insight of Plato and that Aristotle uses it as the foundation of his philosophy. It has, in one form or another, furnished the light for all philosophy worthy of the name since Plato first saw it. . . . Each thinker may claim originality, not only for his statement of it, but also for the insight itself, for it can not be borrowed from another. It is itself an original insight. . . . All dependent being is a part of independent being, and all independent being is self-determined being. The absolute is not, therefore, an empty absolute—an indeterminate being—but it is determined. It is not determined through another, but through itself. If there is no independent being, there is no dependent being. If there is no self-determined being, there is no being whatever.

"It was in 1864 that I obtained an insight into the logical subordination of fate to freedom.

"In 1866 I, for the first time, read through Hegel's 'Larger Logic,' reading it in the English translation that had been made for myself and two others by Henry C. Brockmeyer in 1859 and 1860. I copied the work entire from the manuscript, and I am sure I read every word of it, but I am equally sure that I did not understand at the most anything beyond the first part of the first volume, and could not follow any of the discussions in the second and third volumes, or even remember the words from one page to another. . . . This experience of my own, which lasted for years, is, I presume, the experience of other students of Hegel, and also of students of any other system of deep philosophy."

It is impossible to overestimate the value of such testimony coming from such a man. To numbers of aspiring young minds in this country, whose spiritual life was being suffocated under the deadening negations of Herbert Spencer's doctrine of the "Unknowable," the message of Dr. Harris came with unspeakable relief. If something can, after all, actually be known! If the universe is not an unsolvable riddle, but instead an open book to the sufficiently strong and persistent inquirer, then, indeed, and then only, was "life worth living." It may be doubted if in the history of Amer-

ican thought a single article of no greater length ever wrought so helpfully as has Dr. Harris's treatment of Herbert Spencer's philosophy, first declined by the editors of *The North American Review,* but which Dr. Harris believed to have value and determined should have a hearing. If the *Review* would not publish it, he would publish it himself. Thereupon he issued the first number of the *Journal of Speculative Philosophy,* with his article on Spencer as its leading contribution. That journal, the most remarkable of its kind in the English language, with its motto from the words of Novalis, "Philosophy can bake no bread; but she can procure for us God, Freedom and Immortality," gave him immediate recognition by the great thinkers of the world, and its volumes are the valued reportorium of much of the very best and most helpful of ancient and modern philosophical thought. Later Dr. Harris's examination and criticism of Spencer's ideas on education did a similar service for the teachers of America.

"God, Freedom and Immortality"! The personality of God, the freedom of the human will, and the immortality of the soul! Insight into the demonstrable truth of these three doctrines became the basis of all his educational work, that by which, doubtless, he is best known to the general public. They were the touchstones for all educational theories. Any theory inconsistent with them he knew to be defective, and ultimately untenable, and he was as certain of his conclusions as is the well-trained inventor that the circle will never be squared, and that no machine will ever be invented that will generate force and furnish perpetual motion, no matter how hard and long men may strive to accomplish it.

Philosophy became to Dr. Harris and his associates the most practical of all species of knowledge. They used it to solve not only all problems of school-teaching and school-management, but the "dialectic" of politics and political parties, and they applied it to the interpretation of literature and of art in its every phase. Dr. Harris saw that the highest form of philosophical thinking is the only form which is consistent with a true theory of education; therefore, it was to the test of this highest form of thinking that he subjected every educational question. Seeing the world explained by the principle of "absolute person," he found the world of institutions—the family, society, the state, the church—a world in harmony with such a principle.

It was this insight into philosophy which enabled him to put forth in his St. Louis school reports those classic discussions of educational questions to which wise teachers resort for guidance, and will resort for generations to come. In the light of his highest

philosophy he discussed every problem, and brought often most surprising results, in many instances contradicting current ideas. Thus he set forth the culture-value of each study in the curriculum, *e. g.*, showing the superiority of grammatical and linguistic study over mathematical study for mental discipline. Thus he enforced the truth that in the study of things the transcendently important "thing" is the word; that to know words and their meaning is "an activity of divine significance," denoting the formation of universals in the mind and the creation and use of symbols to represent them, the characteristic distinguishing between the brute and the human.

It was thus that he pointed out the only way to cultivate the emotions, viz., by the development of the intellect and the will. Thus he relegated sense-perception to its proper and very subordinate place in education. Thus he showed that the higher faculties are *not* built up out of the lower ones and that perceptions will *not* grow into thoughts "when they have become sufficiently numerous," and that over-cultivation of sense perception in tender years may so arrest the development of the soul in a mechanical method of thinking as to prevent further growth into spiritual insight. Thus he developed the true method of the study of the natural sciences, the rational foundations and also the limitations of the kindergarten, the warrant for state support of the higher education, the study of the classics, coeducation of the sexes, his exaltation of the text-book method—learning how to master the printed page which holds the accumulated wisdom of the race—above the oral and object-teaching methods, his discussion of prescription *versus* spontaneity, his discernment of Goethe as the profoundest writer on education in modern times, his discussion of the difference in kind between imagination and pure thought, and his demonstration of the capacity of man to think the true and positive thought of the infinite. These discussions, which I have taken at random, are but examples of a thousand services of transcendent importance to education which he ceaselessly rendered, and all with homeliest and simplest illustration and matchless power of exposition.

Here was the one man of our time who would at all times and places, and in the most unmistakably positive fashion, speak of the immortality of the soul, the freedom of the will, and the personality of God, as assured and fundamental truths, and who would in his report to the St. Louis School Board use such language as this:

"Thus it is in our own time that we see the so-called 'object-lesson' system arise in opposition to the 'discipline' system in vogue.

" 'Let us know what is.' 'Let us learn from the object itself, and not manipulate words.' 'The learner should see, hear, and

feel for himself'—say these new lights in the educational world. How plausible all this is, and how legitimate, too, in its sphere—its *narrow* sphere! But how subversive of all education when it is made the *whole scope!* For we can see, hear, and feel only immediate objects. No object that possesses universality can be thus seized, and hence all the ultimate results of science must be ignored by this system if it would be consistent. Can we present to the senses a single necessary truth! Can God, freedom, and immortality be thus cognized?

"These require rather the profound reflection of the soul into itself. The mind must rather arise out of the senses and the external—the inward light must shine so that by its mild radiance the eternal verities may become visible."

With tireless zeal, he labored all his life to remove from the teachers and youth of the country that which he considered the worst of intellectual obstacles, namely, "the belief that what can not be understood at first trial is permanently beyond any one's powers." He had no patience with the common remark: "My mind was not made for philosophic work." He said the motto of the schoolroom should be: "Each may master the deepest and wisest thoughts that the human race has transmitted to us." And he determined in his own expositions to leave no obscurity except, indeed, such as is due solely to the philosophic depth and generality of the treatment. He knew that "pure thinking" was hard, but he also knew that it was not impossible.

He was at endless pains to set forth the three orders of knowing and the steps by which the lower ones may be transcended and the highest attained. To lead people to think the world as totality he saw to be necessary if they are ever to achieve true thinking. The interminable mischief of confounding imagination and conception he pointed out and illustrated in every possible way, and felt, as all true philosophers have done, that it was a supreme service to mankind to make this clear. Having the good fortune to have been directed early to the really great thinkers—the masters—and having thus escaped the debilitating effects of time and energy spent on the second-rate, he was never weary of urging the study of the highest and best.

He was a keen student of physiological psychology, always familiar with the latest results of the laboratory, and recognizing the pathological and other services of this research, but he did not discover in it any new grounds for disturbing the spiritual theory of the soul, which, not being organic like the body, was to him always a "higher form of being, namely, a pure activity, which makes its product, that is, its organism, for the sake of self-revelation."

As he went on, his vast and varied scholarship stood him in wonderful stead. Says President Butler: "Of English writers during the last decades of the nineteenth century, the two Cairds, the two Wallaces, Green and Harris stand almost alone in their ability to reach really exceptional heights in the task of philosophical criticism and interpretation." It will be noted that the only American name in Dr. Butler's brief list is that of Dr. Harris, and to "philosophical criticism and interpretation" he might have added, with propriety, "original philosophical discovery."

Noting the profound significance which Hegel saw in the distinction of the figures of the syllogism, Dr. Harris devoted great and successful study to it, and his exposition of the syllogistic structure of even sense perception and feeling and his rearrangement of the order of the use of the figures constitute some of the most original and important of his work. He was certain that these investigations revealed the real nature of mind as a self activity, its *a priori* principle of causation acting as an anticipation of perception, and the whole structure of reasoning functioning in every act of mind, no matter how low in the scale. Thus he redeemed formal logic from the contempt into which it had fallen in modern times, and showed its value as revealing the spiritual structure of cognition.

His exposition of the common fallacy of the doctrine that the strongest motive governs the will is an admirable example of his constructive work and of the simplicity and lucidity of exposition with which he could bring abstract truth to bear on the practical questions of life.

I have spoken of the breadth of his scholarship. Almost endless illustration of this could be given. His attention was early drawn by the deep suggestions of Hegel's "Philosophy of History" to the subject of East Indian philosophy. The study of oriental thought became a favorite one with him, and he carried it to an advanced point and made what is probably the most complete exposition ever given of the difference in kind between occidental and oriental thought and their essentially opposite character. This is justly esteemed one of his many great services to modern thinking.

Those who most valued his philosophy were most anxious that he should devote himself much more exclusively to it, and that he should leave the world a series of books devoted exclusively to that department of thought. Whatever regret one may feel that this could not also be done, it is impossible not to be thankful for that other unspeakable service which he rendered to education, his devotion to which prevented the other accomplishment.

His constructive work in philosophy was so exemplified by, and

wrought into, his educational work as to be less known apart from it than could be desired, and it is true that he left not many volumes of purely philosophical research. Time, however, will remedy that seeming deficiency.

> "One accent of the Holy Ghost
> The heedless world hath never lost,"

sings Emerson, and I am confident that, as time goes on, earnest students of philosophy will more and more find that Dr. Harris has blazed the trail for them to the mountain tops as no other writer in English has ever done. It should be remembered also that while so much of his best work is scattered in lectures and separate papers, Dr. Harris did leave a goodly body of available philosophical work. His "Treatise on Hegel's Logic" I have called the greatest American book. He not only mastered the system of him whom he esteemed the greatest modern thinker, but he was able to criticize it and supply the needed exposition which fidelity to the strictest thought demanded. Next in importance is his "Psychologic Foundations of Education," a book which I venture to think unique alike for its depth of insight and its lucidity of exposition, and unmatched in its value to the earnest student of educational theory. His edition of Rosenkranz's "Philosophy of Education" contains a body of his own notes so large as to constitute a considerable part of the volume, and it is of the highest quality. The prefaces which he contributed to the many volumes comprising the Appleton's "International Education Series" would, if collected in a volume by themselves, constitute a work of very great value.

Even in the briefest sketch of his work mention should be made of his vast work as editor-in-chief of the New Webster's "International Dictionary," to which he contributed many signed articles and definitions in the departments of philosophy and psychology, which a competent critic has characterized as "miracles of clarity, precision, and comprehensiveness."

His contributions to literary and art criticism must be characterized in terms of no less exalted estimate. In themselves deserving extended notice, I must here only mention a few of them, such as his papers on Raphael's "Transfiguration," Michael Angelo's "Fates" and "Last Judgment," his Interpretation of Goethe's "Faust," and his "Spiritual Meaning of The Divine Comedy." The last two he himself considered among the most successful of his writings of this order, and it was a copy of the last named that was placed by loving hands within his own at the end.

Of his constant and amazing productivity in the way of lectures and contributions to the newspaper and magazine press, of his lead-

ing part in the famous Concord School of Philosophy, and of his monumental services for many years as U. S. Commissioner of Education, I can make but the bare mention.

I have conceived that, in the limits permissible in this article, I might render his memory and the purposes for which he lived my truest tribute and service by denying myself the whole field of his biography, so full of material of significant and valuable character, and, mainly, even that of my own estimate of his personality and character, gained in many years of intimacy, in order to speak of him as philosopher and teacher. A word only upon the man himself, a theme more lofty than all. Only a comprehensive and detailed life of him could give any adequate idea of his greatness of heart. I have long regarded him as the most complete and most practical, and hence the greatest, Christian I have ever known. His soul seemed to be not only absolutely devoid of envy, but absolutely inspired by love for mankind. Of the endless anecdotes that could with truth be told of him, I am confident that not one would conflict with what I have said. Thousands appealed to him individually for counsel and help, and these he gave without stint so long as physical strength permitted, and these thousands, with personal grief at his death, will rise up and call him blessed.

In thinking of him as I have known him, I recall the lines which I must be permitted to repeat in personal and deepest tribute to him, whom so many will, with me, love to call "guide, philosopher, and friend."

> "Never to the mansions where the mighty rest,
> Since their foundation, came a nobler guest."

C. H. AMES.

BOSTON, MASS.

A DIVISION OF THE PROBLEM OF EPISTEMOLOGY

IN order to begin the discussion of any philosophical topic it is necessary not only to adopt an arbitrary nomenclature, but also to adopt an arbitrary division of the field of study; for a *proper* division, one that shall exhibit the real coordination of things, is the *result* of philosophical study. If one were to adopt a philosophical classification one would have committed oneself already to a philosophy. Hence it is safer to adopt the classification of common sense, it being generally assumed that this is arbitrary, or rather that it is due to some other motive than the theoretical interest, and is, therefore, as non-committal as any classification can be. The virtue of common sense for our purposes lies in the fact that, while it is not

epistemological, it nevertheless contains distinctions with which all investigators are familiar and which can serve unambiguously to identify the subject-matter of epistemology.

It is never proper, I think, to attribute definitions to common sense; for common sense consists primarily in knowing the thing when the thing is there, and not in knowing in what the thing consists. In other words, common sense is denotative rather than connotative. This follows from the fact that it is of immediate practical importance only to recognize the thing "when you see it," and to know what to "do about it." Common sense consists, then, in certain *working distinctions,* expressed in the words that are generally and unhesitatingly used. But these distinctions are by no means systematic; that is, it can never be assumed that they signify equivalent degrees of difference, or that the things distinguished are logically coordinate. On the contrary, it must be assumed that critical reflection may be in a position to assert that things are not so different as is commonly supposed; that light, for example, is only a kind of motion. Similarly, it must be assumed that the antitheses of common sense may obscure the real nature of things, as the real nature of man is obscured by dividing him into Jew and Gentile or into Greek and barbarian. Above all, it is necessary to avoid a tendency to attribute to the things themselves that simple numerical difference and equal dignity as members of one class that belongs to words or phrases; for it may well be that *my grandfather* and *the man you met on the street* are the same man. In short, common sense may give us something to talk about, but it it has little to do with what we shall think at the end. Mindful of these precautions, I think we may safely accept at the hands of common sense a rude sketch of the region to be explored, in the hope that we may learn enough to replace it with a true map.

It is possible to formulate the problem of the *structure* of knowledge independently of the problem of truth or the value of knowledge. Every theory of truth must presuppose the general cognitive character of those familiar transactions which common sense terms "knowing something." Even a theory, such as idealism, which denies that there are any historical instances of unqualified truth, must rest its case entirely on that part or degree of truth which is an accomplished fact. In other words, it must be admitted by all parties that, even though there be no instances of completely knowing, there are, nevertheless, innumerable instances of knowing somewhat, and so, of knowing. We are to leave out of our present calculations, then, the question as to what distinguishes more knowledge from less knowledge, good knowledge from poor knowledge, or even successful knowledge from the failure of an attempt to know. We

have to do only with the components into which any typical instance of knowledge may be analyzed, and with the relations that subsist between them.

We are to begin, then, with components of knowledge as indicated by ordinary discourse, assuming that both their number and their juxtaposition are subject to correction. I find that common sense distinguishes four items, different from one another in that they may be separately referred to or talked about without confusion. These four items are as follows: (1) *the person who knows;* (2) *the knowledge which the person has;* (3) *the thing of which something is known;* (4) *the something known.* Since it is customary in epistemological discussions to begin with a simpler classification into *knowing* and *known,* or *subject* and *object,* a word of explanation is in order. The working distinction between the person (1) and his knowledge (2) is obvious enough. It would never occur to the layman, or to any philosopher in his unreflective moods, to identify a man with his idea or with his perception. If this identification is to be made, if persons are to be defined in terms of their content of mind, it must result from critical thought. The distinction between the thing known (4) and the thing *so far as* known (3) is scarcely less clear. For it is commonly recognized that knowledge is rarely, if ever, exhaustive. What is known of a thing is never, in particular instances, the whole of the thing. The thing itself is somewhat known, and somewhat unknown. In other words, it is supposed to be possible that more should be learned *of that which* is already known; or that other persons should know something that one does not know of that same thing which one knows. The distinction between (2) and (3) is the most obscure, and is the one most in need of critical examination. But that such a distinction is made, and that it meets the test of intelligible discourse, can not, I think, be denied. Thus one may speak of the known stars, and of the observed side of the moon (3), as distinguished from the celestial system or the moon (4); or, on the other hand, as distinguished from the information concerning celestial bodies possessed by the learned astronomer, or the observation of the moon made by the individual investigator (2). Hence, for purposes of ordinary discourse there is a difference between the thing so far as known and the knowing of it. What sort of difference this may be, whether, for example, a difference of emphasis or a difference of quality, is a question on which, so far as I know, common sense throws no light.

These being the four distinguishable items denoted by the term "knowledge," it becomes a task of epistemology to define the relations between them. It follows that there are three fundamental

problems: I. What is the relation between the knowledge (2) and the something known (3)? II. What is the relation between the thing (4) and what is known of it (3)? III. What is the relation between the person (1) and his knowledge (2)? Let me briefly characterize each of these problems.

I. *What is the relation between the knowledge (2) and the something known (3)?* The simplest doctrine, in which there is the least departure from the verbal arrangement, asserts that the relation between these two items is one of entire non-identity or mutual exclusiveness. This exclusive difference may be defined spatially or temporally, the two being literally *outside* of one another; or it may be defined qualitatively, the two being altogether different in *kind.* In the former case it is still possible that the knowledge and the something known shall be similar, provided it be supposed that similarity does not imply identity. In the latter case, while a relation of similarity would seem to contradict the difference of kind, the assertion of such similarity is almost inevitable when the attempt is made to show how the one item can be knowledge *of* the other. I propose that we use the phrase *epistemological dualism* to indicate the assertion of any type of exclusive difference between the knowledge (2) and the something known (3). The phrase *epistemological monism* will then indicate the assertion that these items are *distributively identical;* in other words, that what belongs to the one belongs also to the other. The outstanding difference will then be of the same class as the difference between *my grandfather* and *the man you met on the street,* when these denote the same person, or the difference between *Booth's assassination of Lincoln,* and *Lincoln's being assassinated by Booth.* Whether this be more than a verbal difference need not here be determined.

II. *What is the relation between the thing (4) and what is known of it (3)?* Here it is not a question simply of inclusiveness or exclusiveness, for by definition the thing *is* what is known of it, together with something more. It is assumed that these two items are at least partially identical. The question is rather this: Is the something more also something known? Is the nature of the thing constituted by, or its existence conditioned on, its being known? In other words, is the thing (4) to be defined either as the presently known (3), or as a series of knowns, of which the present is one, or as a complete known, of which the present is a phase? The affirmative answer to this question is what I shall call *ontological idealism.* On the other hand, it may be asserted that the thing's being somewhat known is an accident, and not a part of its definition. I recognize that it is sometimes contended that there is no such thing as an accident; in other words, that all relations are internal and

essential. But, so far as I know, it is agreed that in any case there are differences of degree, some modifications of a thing being less significant of *its* nature than others. Independently of a final decision concerning the internality or externality of relations, it would still be possible, then, to define a doctrine which should assert that a thing is as indifferent to its being known *as it can be to anything.* Since ontological idealism asserts that a thing's being known constitutes its fundamental predicate, its metaphysical definition, it is not difficult to distinguish this doctrine from an assertion that a thing's being known is as essential to it as, for example, is my existence to the first theorem of Euclid. It is clear that the ontological idealist can not mean simply that knowledge is one of the items of a world all the items of which are interdependent. He must mean that knowledge is the one item that is the direct support of each and every other item, this being the base, the rest the superstructure, this the container, the rest the contained. In other words, ontological idealism contends that every item in the world must be known in order to be. The contrary doctrine, then, would maintain, not that everything does not belong to an organic whole of which knowledge is a part (which relates to a wholly different problem), but that it is not necessary that everything should sustain that very specific relationship of being known. This contrary doctrine, generally taking the form of a denial of the other, I should term *epistemological realism.*

III. *What is the relation between the person (1) and his knowledge (2)?* The importance of this problem in a systematic study of knowledge has been neglected. I shall hope to show presently that certain doctrines constructed in answer to the other problems are fatally confused through involving an obscure or equivocal conception of the relation between a person and his ideas or perceptions, between a mind and its content. However, although the problem has rarely been examined strictly on its merits, there are two doctrines that can readily be distinguished. According to the first of these doctrines the nature of the person necessarily involves his knowing something. He may be the series of his sensations, the sum of his perceptions, the development of his ideas, or any sort of specific organization of which his content of mind is an integral part. I propose that this doctrine be termed *psychological idealism.*[1]

[1] I realize that this phrase can not be thus used without the risk of misunderstanding; but I see no help for it. There is no word for the science of the soul or conscious individual other than the word "psychology," in spite of the fact that it is now commonly used in a methodological sense to apply to a very small part of that field. It is as though whenever we meant cosmology or ontology we were compelled to say "physics." I use the term "idealism" to refer to a theory which defines in terms of ideas, ideas being any content of mind supposed

The opposite doctrine, *psychological realism,* will then assert that the person is definable independently of his knowing. This doctrine may assume forms ranging all the way from spiritualism to materialism. The person may be defined as indivisible soul-entity, as will, as activity, as energy, or as body. In any case he will be *that which* knows, and not the knowing.

Now it is evident to any one acquainted with philosophical literature that this is not the traditional classification of doctrines. I have come regretfully to the conclusion that the traditional classification involves over-simplification. Because the complexity of such historical theories as subjectivism, idealism, and realism has not been sufficiently recognized, present controversies are largely blind and wasteful. It has become desirable in very many disputes *to divide the question.* This method has the additional advantage of placing less emphasis on the school and more on the problem. Furthermore, the analysis of a complex doctrine into its simpler parts will often demonstrate its incompleteness, its real disconnectedness, its latent ambiguities, or its careless handling of crucial questions.

A systematic epistemology in the structural sense, that is, exclusive of the problem of truth, would necessarily consist of three fundamental propositions, epistemological monism or dualism, ontological realism or idealism, and psychological realism or idealism. Let me illustrate from the cases that are least equivocal.

What is known as subjective idealism, the view more or less consistently maintained by Berkeley and Schopenhauer, and the view which on the whole may fairly be attributed to Fichteans and neo-Fichteans of all shades of opinion, is clearly a species of ontological idealism. *"Esse est percipi"* and *"Die Welt ist meine Vorstellung"* are the classic formulations of that proposition. The latter of these two formulations also involves epistemological monism; this being also clearly involved in the proof which Berkeley uses to establish his ontological idealism. And the percipient or thinker is not constituted of percepts or ideas, but is that activity or will which receives, regulates, or creates them. In other words the subjective idealist is a psychological realist. It is, of course, characteristic of this philosophy to arrive in the end at an esoteric epistemology of its own. The real knowledge is the intuitive, inarticulate awareness that the person has of himself. In this knowledge there is no difference whatsoever between the person and the thing known; and there is no idea, that is, no knowledge in the original sense of the term. But this

to have a cognitive function. "Psychological idealism" will then mean that theory of the soul which defines it partially if not altogether in terms of cognition, as "ontological idealism" will be that theory which defines being in similar terms.

esoteric epistemology is based on an epistemology which uses the four terms from which this analysis proceeds. It is a progressive reduction of these terms; a reduetion first of the thing to its being known, second of its being known to the person's ideas, and third of the person's ideas to some inner essence of the person. The reduction involves three propositions, and can be halted by the denial of any one of them.

Broadly speaking, the differenee between subjective and objeetive idealism lies in the fact that while subjective idealism reduces to one extreme, namely, to the person, objeetive idealism reduces to the eenter, namely, to knowledge. The Kantian deduction of the eategories, as interpreted by his "objective" followers, reveals in one and the same analysis of experience, the thing as the object thought, and the person as the "I think." Metaphysically, this is taken to mean that reality is the system of thought, with subject and object as necessary coordinate aspects. The one indubitable fact is that objective idealism involves ontological idealism. Unknown reality is an abstraction, a nonentity, an impossibility. When we consider the two other problems, we are compelled to admit that the doctrine is ambiguous. Everything depends on whether subject and object are strietly coordinate, or the object virtually subordinate to the subject. In its more recent developments idealism appears to insist on the former alternative, in whieh case it would involve psychological idealism, and (though there would still remain room for doubt here) epistemological monism. On the other hand, the moral and religious predilections of idealism have always urged it in the direction of an epistemological realism of the spiritualistic type; in the assertion that the subjeet creates or is in some fundamental sense prior to the object. Furthermore, whenever the opposition of subject and object is emphasized for logical reasons, the former tends to split off and asssume independence, thus virtually becoming an original spiritual entity instead of one of the tributary parts of knowledge. What Hegel really meant in this regard, when he spoke of the "self-externalization" of mind, and when he said that "liberty is the notion's absolute negativity or self-identity," can, I think, never be finally determined. This much, I think, is clear: that if the distinction between subjective and objective idealism is to be maintained, the latter must be unreservedly idealistic in its psychology, and must not allow the differenee between the subjeetive and objective aspects of knowledge to become so great as to destroy the identity. Epistemological dualism is a step from objective idealism in the direetion of subjeetive idealism. On the whole, then, I think that we may define objective idealism as

the combination of ontological idealism, epistemological monism, and psychological idealism.

Realism, as a historical doctrine, consists in the assertion of ontological realism. Its solutions of the other problems are, so far as I am able to discover, conflicting or ambiguous. Realism asserts that, generally speaking, being known does not either condition the existence of things or define their nature. But realism, in the historical sense, is not a systematic epistemology, because it has combined this assertion with every possible assertion concerning the relation between the knowing and the something known, and the relation between the person and his knowledge. There is one variety of realism, which I here suggest only as an alternative worthy of consideration, obtained by combining ontological realism, epistemological monism, and psychological idealism. Such a doctrine would assert that while the thing is not conditioned by its being known, nevertheless, in so far as it is known it is distributively identical with the knowledge of it; and that the person must be defined as an organization into which knowledge enters as an essential component.

It would be unprofitable for me to discuss all of the alternatives which this method of classification defines, or to attempt to fit all of the round historical doctrines into its square holes. If there be three questions, each providing for two contradictory answers, there will be eight doctrines in all that may be said to be comprehensive. I shall limit myself to the enumeration of these doctrines, and the indication of those applications which appear to me at the present writing to be least doubtful. I shall use the letters, *E, O, P, M, D, R,* and *I,* as abbreviations for *epistemological, ontological, psychological, monism, dualism, realism,* and *idealism,* respectively.

(*EM*) (*OI*) (*PI*): Objective idealism. Phenomenalism.
(*EM*) (*OI*) (*PR*): Subjective idealism.
(*EM*) (*OR*) (*PI*): Realism.
(*EM*) (*OR*) (*PR*): Agnosticism.
(*ED*) (*OI*) (*PI*):
(*ED*) (*OI*) (*PR*):
(*ED*) (*OR*) (*PI*): Leibniz.
(*ED*) (*OR*) (*PR*): Locke. Descartes (?).

It is evident from this arrangement that there may be said to be four varieties each of epistemological monism, epistemological dualism, ontological realism, ontological idealism, psychological realism, and psychological idealism. It follows that were two doctrines to be regarded as different when they contained identical propositions arranged in a different order, there would be twenty-four doctrines that may be said to be comprehensive in that they answer all three of the questions propounded above.

This table will, I think, help to justify the assertion that it is possible to separate the problem of the structure of knowledge from the problem of the value of knowledge, or what is traditionally known as the theory of truth. That the two are blended in most philosophies serves to confuse both issues. It will be observed that, so far as the structure of knowledge is concerned, objective idealism and phenomenalism are agreed. Both assert that reality and the process of knowledge are identical. The difference lies in the fact that, whereas phenomenalism construes the cognitive process in terms of sensation perception, objective idealism construes it in terms of thought. But this difference turns on the question whether to know qualities and concrete particulars such as are known in perception, is to know more correctly, validly, profoundly, or, in some sense, better, than to know relations and universals such as are known in thought. Whether qualities and concrete particulars must be perceived in order to be, or whether relations and universals must be thought in order to be, is an altogether different question. Owing to the ambiguous use of such terms as "rational," "meaning," "significant," etc., it is often assumed that ontological idealism is a direct implication of rationalism; whereas it would be just as reasonable to regard it as a direct implication of empiricism. The result has been that objective idealism has failed to isolate its ontological idealism and subject it to rigorous criticism on its own merits.

The situation in the case of Descartes and Locke is similar. Whether Descartes was a psychological realist or a psychological idealist, is perhaps doubtful; for, although thought is the attribute of mind, it is not clear that thought is necessarily cognitive. But both Descartes and Locke are, without doubt, epistemological dualists and ontological realists; the difference between them turning on the value attributed to sensation.

I do not here contend that the study of the structure of knowledge, of the mutual relations of its several components, can be satisfactorily completed without reference to a determination of grades of value in knowledge. This may or may not be possible; and it must be admitted, I think, that the very question of its possibility can not be divorced from the structural problem. But I do assert that we have to do here with separate propositions, each of which has to be considered on its merits and established on the evidence proper to it. And I contend that the same is true of the several questions involved in the study of the structure of knowledge. The question of the relation of the knowledge and the something known, the question of the relation between the thing and what is known of it, and the question of the relation

between the person and his knowledge, are questions that can not, without sacrifice of clarity and cogency, be discussed all at once or answered in any single proposition.

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REVIEWS AND ABSTRACTS OF LITERATURE

Le rationalisme comme hypothèse méthodologique. FRANCIS MAUGÉ. Paris: Felix Alcan. 1909. Pp. xii + 611.

Historic inductive and deductive logic is dying and we have, as claimant of its place, "rational construction," a new method, which the author undertakes to disengage from the conditions of the realization of the ideas of experience and of system. The prospect, of course, stimulates enthusiasm: "to render intelligible the order of production of phenomena by a systematic prevision of experience, and to participate in the peace of a reconquered liberty, in the intoxication of creative thought; that is the only ideal that to us seems to merit any sacrifice" (p. xi).

Most philosophers have thought that logic is "the expression of universal rules which are imposed on every human being in the search for truth by the single fact of the constitution of his intelligence" (p. 1). The "uncontested triumph" of the syllogism has led them astray, "for, if the necessary implies the universal, universality can be, in fair return, the sign of necessity" (p. 1). No wonder "Aristotelian logic, even perfected by Hamilton, commences to totter in its turn under the blows which are subverting science" (p. 1)!

The possibility of science implies time and constancy of the laws of nature. A typical deduction is the following—"Science is a system of correlations between modes of consciousness expressed by language" (p. 33), and this definition is exactly like a mathematical definition. Language is the expression of thought, therefore, since words are discrete, ideas must be so, and modes of consciousness must be so; but words have to be ordered in series, therefore ideas must be, "and, as discontinuity in succession is precisely the character which, since Kant, we agree in attributing to time, the form of time is hereby deduced, as imposed by the conditions of the possibility of science" (p. 35). However, all this merely means "that, scientifically, we can not express anything except under the form of time" (p. 35).

As to the new method, science can not get along, even by such deductions, without experience. "A phenomenon is the object of a legitimate experience, if it is proved, thanks to the elimination of perturbing influences, that it can not be altered by its surroundings (milieu), and that it is incapable of being reduced or modified by analysis" (p. 47).

The experimental method, therefore, is a method of isolating phenomena, and the isolation can be obtained in four ways: (1) By suppression, (2) by segregation, (3) by neutralization, (4) by differentiation (p. 71), then, having obtained elements by these principles, the inevitable

rationalistic method follows: we combine, or "synthetically deduce" (cf. p. 175), following an order dictated by the imagination, certain intuitive elements assumed to be identical with those found by these principles, and if our elements are rigidly derived, the result is science.

The biological and psychological sciences are treated at considerable length in the light of this method. But "the important thing is" that the philosophy of science can never be completely finished. "Humanity, in its search after truth, is like a traveler on an infinitely high mountain, formed of graded plateaus. At each step the horizon enlarges and the intoxication of contemplation grows. But the limit of the invisible enlarges also and the desire to see farther presses the soul with more force. The philosophy of the sciences is neither the crown of knowledge nor the Nirvana of thought. It is for the scientist what the compass is to the mariner, an instrument of discovery and a principle of confidence" (p. 606).

The reader of the above may pass his own judgment upon this book.

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Immanuel Kant. OSWALD KÜLPE. Zweite, verbesserte Auflage. Leipzig: Teubner. 1907. Pp. viii + 163.

The first edition of this brief, popular introduction to Kant was noticed in this JOURNAL, Vol. IV., p. 554. Some ten pages of new matter have been added in the present edition, but the author has not taken great advantage of the opportunity for a revision. Indeed. the reprinting of the book with so slight alteration constitutes a melancholy evidence of the vanity of book-reviewing. The inadequacies and inaccuracies previously noted in Külpe's account of Kant's ethics remain uncorrected; the exposition of that part of the system is still based almost exclusively upon the "Kritik der practischer Vernunft," and consequently omits altogether certain of the most important and characteristic of Kant's moral ideas, found in the "Metaphysik der Sitten." Külpe has used his additional space chiefly to expand the part of the book already somewhat disproportionately lengthy, viz., to the elaboration of his criticisms upon Kant's phenomenalism. The *prima facie* incongruities of the several epistemological views expressed by the author are not alleviated by the fuller presentation of those views. We are told (p. 80) that, according to Kant, "it is through the matter of intuition, through perceptions and sense-impressions, that we are brought into relation with reality." On page 82 the author expresses his agreement with this view: "certainly," he declares, "access to realities of any sort is possible only through experience." Genuine metaphysics is an "inductive" science, a *Realwissenschaft,* which "seeks to carry the results of the empirical sciences out to completion" (p. 113). Yet we are elsewhere assured that "perception, representation, feeling," are incapable of "cognizing (*meinen*) any object as in its existence and nature independent of cognition and of the knowing subject" (p. 97). What is "perceived, imaged, felt," always gets its character, at least in part, from the peculiarities of those processes in consciousness. It is

only in pure thinking (*das Denken*) that we grasp objectivity undisguised; for in apprehending necessary conceptual laws we recognize those necessities as valid independently of the accidental circumstance that we happen to be thinking them: *die immanente, logische Gesetzlichkeit der Begriffe, die durch Denktätigkeit selbst entstanden sind, ist vom Denken und Denkenden unabhängig.* This means that we know *a priori* the validity of various necessary truths—and know them *a priori* to be truths about objects as they are in themselves, not merely about our own subjective constitution as percipients; *e. g.*, "the principle of causality is *a priori* for all the sciences dealing with matters of fact." And the apriority of this or any other principle means precisely its non-inferribility from any actual sum of experiences: for a law "to have *a priori* validity for any realm of objects means the impossibility of finding any proof for it within that realm" (p. 98). Here, then, is apriorism of the most extreme, "dogmatic" kind—the sort of epistemology which the Wolffian rationalists were (more or less falsely) accused of holding, which, Külpe himself tells us, Kant "crushed" beyond the possibility of restoration. How the aprioristic dogmatism of some of Külpe's utterances can be united in a single consistent doctrine with the ostentatious empiricism of some of his other utterances, is a puzzle passing the ingenuity of the present reviewer. Not less difficult is it to understand why an epistemologist who returns to nothing less than the "objective" conceptual rationalism ascribed to the Wolffians should so constantly belabor those theorists, and so liberally eulogize Kant for "refuting" one of the doctrines which the eulogist himself adopts.

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JOURNALS AND NEW BOOKS

REVUE PHILOSOPHIQUE. November, 1909. *La dégradation de l'energie et le point de vue humain* (pp. 441–486): F. Le Dantec. – The author tries to show that such conventions are concealed in the great principles of physics that the principle of equivalence and the principle of Carnot merely mean the world is what it is and goes where it goes, but we know neither what it is nor where it is going. *Le dilettantisme sentimental* (pp. 487–503): Dr. Dromard. – Sentimental dilettantism has a place in life, but not in our external life, for this concerns others. Its place is in the inner life, where we are justified in being poets. *Mes souvenirs affectifs d'enfant* (pp. 504–506): L. Dugas. – From the examination of the author's own affective memory, the emotional memory is disengaged as autonomous. *Analyses et comptes rendus.* Dr. Sollier, *Le doute:* L. Dugas. A. Fouillée, *Le socialisme et la sociologie réformiste:* D. Parodi. E. Seligman, *La interpretacion economica de la historia:* G. Richard. A. Folchi, *Le moderne teorie teocratiche:* G. Richard. G. del Vecchio, *Su la teoria del contratto sociale:* G. Richard. L. Dugas, *Le problème de l'éducation:* P. Thomas. Vorwinckel, *Pädagogische Deutungen:* G. L. Duprat. *Revue des périodiques étrangers.*

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NOTES AND NEWS

Students and friends of Professor Rudolf Stammler have founded a prize in his honor to be awarded by the *Kantgesellschaft* for an essay on a question in the philosophy of law to be chosen by Professor Stammler himself. He has selected *Das Rechtsgefühl,* with the following comment: "Es ist dieser Begriff erkenntniskritisch und psychologisch zu untersuchen, sein Auftreten in der Geschichte der Rechtsphilosophie zu erörtern und seine Bedeutung in der Theorie und Praxis des heutigen Rechts darzulegen." Competing essays should be written in German and sent prior to April 22, 1912, to the Curator of the University of Halle. There is a first prize of 1,500 Marks, a second of 850 Marks.

Mrs. Martha S. Jones, of Boston, Massachusetts, has given her fine estate and parks near Portsmouth, New Hampshire, as a gift to Dr. Boris Sidis, of Brookline, Massachusetts, for the purpose of establishing a private hospital named "The Maple-Wood Farms, Sidis Psychotherapeutic Institute," in which modern methods of psychopathology and psychotherapeutics will be employed in the treatment of functional nervous diseases. The hospital will open shortly.

The fifth annual meeting of the Southern Society for Philosophy and Psychology will be held at Charlotte, North Carolina, in affiliation with the Southern Educational Association, beginning December 28, as already announced.

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